```
@US*ER.FLIST,ET CEM.
FLIST  04/23/82   15:44:34
END FLIST  108 CARDS GENERATED.

@PRT,TCL CEM.
FURPUR 28R1 U1 E36 74R1T2 04/23/82 15:44:36

CO*CEM(1)   ELEMENT TABLE
```

D	NAME	VERSION	TYPE	DATE	TIME	SEQ #	SIZE-PRE	TEXT	(CYCLE	WORD)	PSRMODE	LOCATION
	ALUH		ELT SYMB	28 AUG 80	15:49:01	1		45	5	0 1		1792
	BEFGEN		ELT SYMB	28 AUG 80	15:47:47	2		47	5	0 1		1837
	BIGCFX		ELT SYMB	28 AUG 80	15:39:54	3		150	5	0 1		1884
	BLKDAT		ELT SYMB	02 SEP 80	15:40:09	4		247	5	0 1		2034
	CCEVAX		ELT SYMB	28 AUG 80	15:49:28	5		21	5	0 1		2281
	CORFAC		ELT SYMB	28 AUG 80	15:22:54	6		24	5	0 1		2302
	DATA1		ELT SYMB	05 SEP 80	10:28:13	7		2	5	0 1		2326
	DATA2		ELT SYMB	02 SEP 80	16:25:34	8		1	5	0 1		2328
	DATA3		ELT SYMB	04 SEP 80	12:15:06	9		1	5	0 1		2329
	EFALTX		ELT SYMB	28 AUG 80	15:45:55	10		8	5	0 1		2331
	EFCALX		ELT SYMB	28 AUG 80	15:38:27	11		48	5	0 1		2339
	FTP		ELT SYMB	28 AUG 80	15:21:03	12		18	5	0 1		2387
	GETCUM		ELT SYMB	28 AUG 80	15:46:50	13		25	5	0 1		2405
	INITEX		ELT SYMB	28 AUG 80	15:43:46	14		8	5	0 1		2430
	INPUT		ELT SYMB	02 SEP 80	14:00:39	15		136	5	0 1		2438
	LDVIMX		ELT SYMB	28 AUG 80	15:51:43	16		33	5	0 1		2574
	MOBLE1		ELT SYMB	28 AUG 80	15:27:00	17		42	5	0 1		2607
	MODMOD		ELT SYMB	28 AUG 80	15:24:50	18		149	5	0 1		2649
	OUTPUT		ELT SYMB	28 AUG 80	15:29:16	19		91	5	0 1		2798
	PREPRS		ELT SYMB	02 SEP 80	16:12:35	20		55	5	0 1		2889
	SPFCLX		ELT SYMB	28 AUG 80	15:42:48	21		47	5	0 1		2944
	TFCALX		ELT SYMB	28 AUG 80	15:44:57	22		10	5	0 1		2991
	TRKOPC		ELT SYMB	28 AUG 80	15:41:38	23		21	5	0 1		3001
	ART		ELT SYMB	05 SEP 80	14:27:23	24		21	5	0 1		3022
	DISPRS		ELT SYMB	03 SEP 80	15:22:51	25		24	5	0 1		3043
	EMISS		ELT SYMB	04 SEP 80	12:08:00	26		41	5	0 1		3067
	GRAF		ELT SYMB	03 SEP 80	14:59:02	27		37	5	0 1		3108
	MODE		ELT SYMB	05 SEP 80	14:31:03	28		58	5	0 1		3145
	NPATHD		ELT SYMB	04 SEP 80	13:37:19	29		36	5	0 1		3173
	NPATHE		ELT SYMB	03 SEP 80	15:21:57	30		18	5	0 1		3209
	ROAD		ELT SYMB	04 SEP 80	12:04:41	31		61	5	0 1		3227
	SHORTY		ELT SYMB	04 SEP 80	10:59:55	32		36	5	0 1		3288
	STREET		ELT SYMB	03 SEP 80	16:22:23	33		8	5	0 1		3324
	PREPRS		RELOCATABLE	28 MAY 81	12:56:07	34	4	48			QTR	3332
	FTP		RELOCATABLE	28 MAY 81	12:56:08	35	2	13			QTR	3384
	CORFAC		RELOCATABLE	28 MAY 81	12:56:10	36	3	17			QTR	3399
	MODMOD		RELOCATABLE	28 MAY 81	12:56:17	37	3	99			QTR	3419
	OUTPUT		RELOCATABLE	28 MAY 81	12:56:25	38	4	154			QTR	3521
	INPUT		RELOCATABLE	28 MAY 81	12:56:28	39	4	70			QTR	3679
	EFCALX		RELOCATABLE	28 MAY 81	12:56:30	40	3	22			QTR	3753
	BIGCFX		RELOCATABLE	28 MAY 81	12:56:32	41	4	145			QTR	3778
	TRKOPC		RELOCATABLE	28 MAY 81	12:56:33	42	2	10			QTR	3927
	SPFCLX		RELOCATABLE	28 MAY 81	12:56:34	43	2	21			QTR	3939
	INITEX		RELOCATABLE	28 MAY 81	12:56:35	44	2	2			QTR	3962
	TFCALX		RELOCATABLE	28 MAY 81	12:56:37	45	2	4			QTR	3966
	EFALTX		RELOCATABLE	28 MAY 81	12:56:38	46	2	10			QTR	3972
	GETCUM		RELOCATABLE	28 MAY 81	12:56:39	47	2	10			QTR	3984
	BEFGEN		RELOCATABLE	28 MAY 81	12:56:41	48	3	26			QTR	3996
	ALUH		RELOCATABLE	28 MAY 81	12:56:42	49	3	19			QTR	4025
	CCEVAX		RELOCATABLE	28 MAY 81	12:56:43	50	3	40			QTR	4046
	LDVIMX		RELOCATABLE	28 MAY 81	12:56:45	51	3	18			QTR	4088
	BLKDAT		RELOCATABLE	28 MAY 81	12:56:51	52	3	253			QTR	4108
	ART		RELOCATABLE	28 MAY 81	12:57:07	53	4	29			QTR	4364
	MODE		RELOCATABLE	28 MAY 81	12:57:09	54	4	42			QTR	4397
	EMISS		RELOCATABLE	28 MAY 81	12:57:11	55	4	43			QTR	4443

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@ELT,L CEM.BLKDAT
ELT 8R1 S7491C 04/23/82 15:44:42 (0)
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```
      1.          00          BLOCK DATA                                                                00131900
      2.          00    C                                                                               00132000
      3.          00          COMMON/INDXCM/INDX49,INDXCA,INDXHI
      4.          00          COMMON/BASECM/BASE49,BASECA,BASEHI
      5.          00          COMMON/DELCOM/DEL49,DELCA,DELHI
      6.          00          COMMON/IDLBCM/IDLB49,IDLBCA,IDLBHI
      7.          00          COMMON/IDLDCM/IDEL49,IDELCA,IDELHI
      8.          00          COMMON/MYMCOM/MYM,MYR,TF
      9.          00          COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,FCCC,MS
     10.          00          COMMON/IMCRED/PCIMHN,PCIMHY,PCIMCN,PCIMCY
     11.          00
     12.          00           INTEGER DUM1(190),DUM2(190),DUM3(190),DUM4(190),DUM5(190),
     13.          00          1DUM6(190),DUM7(190),DUM8(190)
     14.          00
     15.          00           REAL SPD(3),MS(6),MYM(20,6),MYR(20,6),TF(20,6)
     16.          00           INTEGER INDX49(30,3,6),INDXCA(30,3,6),INDXHI(30,3,6)
     17.          00           REAL BASE49(10,3,6),BASECA(10,3,6),BASEHI(10,3,6)
     18.          00           REAL DEL49(10,3,6),DELCA(10,3,6),DELHI(10,3,6)
     19.          00           REAL IDLB49(10,3,6),IDLBCA(10,3,6),IDLBHI(10,3,6)
     20.          00           REAL IDEL49(10,3,6),IDELCA(10,3,6),IDELHI(10,3,6)
     21.          00           INTEGER PCIMHN(19,5,4),PCIMHY(19,5,4),PCIMCN(19,5,4),
     22.          00          *  PCIMCY(19,5,4)
     23.          00           EQUIVALENCE (DUM1(1),PCIMHN(1,1,1)),(DUM2(1),PCIMHN(1,1,3))
     24.          00           EQUIVALENCE (DUM3(1),PCIMHY(1,1,1)),(DUM4(1),PCIMHY(1,1,3))
     25.          00           EQUIVALENCE (DUM5(1),PCIMCN(1,1,1)),(DUM6(1),PCIMCN(1,1,3))
     26.          00           EQUIVALENCE (DUM7(1),PCIMCY(1,1,1)),(DUM8(1),PCIMCY(1,1,3))
     27.          00
     28.          00    C                                                                               00138700
     29.          00    C                                                                               00139500
     30.          00    C**DEFAULT MODAL SPLIT                                                          00139600
     31.          00          DATA MS/.803,.058,.058,.045,.031,.005/                                    00139700
     32.          00    C                                                                               00139800
     33.          00    C**ANNUAL AVERAGE MILEAGE ACCUMULATION (DIVIDED BY 100000)                      00139900
     34.          00          DATA MYM/                                                                 00140000
     35.          00         *0.159,0.150,0.140,0.131,0.122,0.113,0.103,0.094,0.085,0.076,              00140100
     36.          00         *0.067,0.066,0.062,0.059,0.055,0.051,0.050,0.047,0.044,0.044,              00140200
     37.          00         *0.159,0.150,0.140,0.131,0.122,0.113,0.103,0.094,0.085,0.076,              00140300
     38.          00         *0.067,0.066,0.062,0.059,0.055,0.051,0.050,0.047,0.044,0.044,              00140400
     39.          00         *0.157,0.157,0.141,0.126,0.113,0.102,0.094,0.086,0.080,0.075,              00140500
     40.          00         *0.071,0.066,0.063,0.060,0.055,0.052,0.050,0.047,0.044,0.041,              00140600
     41.          00         *0.190,0.190,0.179,0.167,0.155,0.143,0.129,0.106,0.092,0.086,              00140700
     42.          00         *0.078,0.070,0.063,0.059,0.053,0.049,0.044,0.046,0.044,0.042,              00140800
     43.          00         *0.736,0.736,0.699,0.633,0.566,0.500,0.434,0.417,0.382,0.360,              00140900
     44.          00         *0.346,0.338,0.331,0.324,0.309,0.287,0.257,0.213,0.184,0.154,              00141000
     45.          00         *.0201,.0251,.0207,.0185,.0172,.0162,.0155,.0149,.0143,.0139,              00141100
     46.          00         *.0135,.0132,.0129,.0127,.0125,.0123,.0122,.0121,.0120,.0119/              00141200
     47.          00    C                                                                               00141300
     48.          00    C**VEHICLE REGISTRATION DISTRIBUTIONS                                           00141400
     49.          00          DATA MYR/                                                                 00141500
     50.          00         *0.075,0.107,0.107,0.106,0.100,0.092,0.085,0.077,0.066,0.052,              00141600
     51.          00         *0.039,0.027,0.018,0.014,0.009,0.006,0.005,0.005,0.004,                    00141700
     52.          00         *0.061,0.095,0.094,0.103,0.083,0.076,0.076,0.063,0.054,0.043,              00141800
     53.          00         *0.036,0.024,0.030,0.028,0.026,0.024,0.022,0.020,0.018,0.016,              00141900
     54.          00         *0.037,0.070,0.078,0.086,0.075,0.075,0.075,0.068,0.059,0.053,              00142000
     55.          00         *0.044,0.032,0.038,0.036,0.034,0.032,0.030,0.028,0.026,0.024,              00142100
     56.          00         *0.037,0.070,0.078,0.086,0.075,0.075,0.075,0.068,0.059,0.053,              00142200
     57.          00         *0.044,0.032,0.038,0.036,0.034,0.032,0.030,0.028,0.026,0.024,              00142300
     58.          00         *0.077,0.132,0.134,0.131,0.099,0.090,0.086,0.062,0.042,0.033,              00142400
     59.          00         *0.025,0.015,0.013,0.011,0.010,0.008,0.007,0.006,0.005,0.004,              00142500
     60.          00         *0.108,0.225,0.206,0.149,0.097,0.062,0.046,0.033,0.029,0.023,              00142600
     61.          00         *0.008,0.005,0.013,0.0   ,0.0   ,0.0   ,0.0   ,0.0   ,0.0   ,0.0   /    00142700
     62.          00    C                                                                               00142800
     63.          00    C                                                                               00143900
     64.          00    C     6 6 6 6 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 9 9 9 9 9                       00144000
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*** A03 ***                                                    *** A03 ***
@ELT,L CEM.DATA2
ELT $R1 S7401C 04/23/82 15:44:49 (0)
     1.          00     1P TEST1                  781215 1 2 1 1 0 0 0
     2.          00     3P   0  0  0 73  02.5 -2.5
     3.          00     4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.201 SEC. IMAGE COUNT: 3

@HDG,P  ******  DATA3  ******
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```
@ELT,L CEM.GETCUM
ELT 8R1 S7401C 04/23/82 15:44:55 (C)
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```
      1.          00          SUBROUTINE GETCUM(CUMMIL)                                                    00100600
      2.          00    C                                                                                  00100700
      3.          00          COMMON/MYMCOM/MYMDUM,MYR,TF                                                  00100800
      4.          00    C                                                                                  00100900
      5.          00          REAL CUMMIL(20,6),MYM(20,6),MYMDUM(20,6),MYR(20,6),TF(20,6)                  00101000
      6.          00          REAL FRAC(4,6)                                                               00101100
      7.          00          DATA FRAC/                                                                   00101200
      8.          00         *          .75 , .375 , .25 , .875 ,                                          00101300
      9.          00         *          .75 , .375 , .25 , .875 ,                                          00101400
     10.          00         *          .75 , .375 , .25 , .875 ,                                          00101500
     11.          00         *          .50 , .25  , .50 , .75  ,                                          00101600
     12.          00         *          .50 , .25  , .50 , .75  ,                                          00101700
     13.          00         *          .50 , .25  , .50 , .75  /                                          00101800
     14.          00    C                                                                                  00101900
     15.          00          DO 10 I1=1,6                                                                 00102000
     16.          00          DO 10 I2=1,20                                                                00102100
     17.          00    10    MYM(I2,I1) = MYMDUM(I2,I1)*100000.                                           00102200
     18.          00    C                                                                                  00102300
     19.          00          DO 100 IM=1,6                                                                00102400
     20.          00          CUMMIL(1,IM)=MYM(1,IM)*FRAC(2,IM)                                            00102500
     21.          00          DO 90 I=2,20                                                                 00102600
     22.          00             SUM=0.                                                                    00102700
     23.          00             SUM2=0.                                                                   00102800
     24.          00             II=I-1                                                                    00102900
     25.          00          DO 80 J=1,II                                                                 00103000
     26.          00    80    SUM=SUM+MYM(J,IM)                                                            00103100
     27.          00             III=II-1                                                                  00103200
     28.          00             IF(III.EQ.0) GO TO 74                                                     00103300
     29.          00          DO 70 L=1,III                                                                00103400
     30.          00    70    SUM2=SUM2+MYM(L,IM)                                                          00103500
     31.          00    C                                                                                  00103600
     32.          00    74    CONTINUE                                                                     00103700
     33.          00             T1=SUM+MYM(I,IM)*FRAC(2,IM)                                               00103800
     34.          00             T2=SUM2+MYM(II,IM)*FRAC(4,IM)                                             00103900
     35.          00             T1=T1*FRAC(1,IM)                                                          00104000
     36.          00             T2=T2*FRAC(3,IM)                                                          00104100
     37.          00             TSUM=T1+T2                                                                00104200
     38.          00    90    CUMMIL(I,IM)=TSUM                                                            00104300
     39.          00    100   CONTINUE                                                                     00104400
     40.          00    C                                                                                  00104500
     41.          00    C                                                                                  00104600
     42.          00          RETURN                                                                       00104700
     43.          00    C                                                                                  00104800
     44.          00    C     DEBUG SUBCHK                                                                 00104900
     45.          00          END                                                                          00105000
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END ELT.  ERRORS: NONE. TIME:  0.279 SEC. IMAGE COUNT: 45

@HDG,P  ******  GRAF  ******
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```
   197.          00            PCCC=ICC
   198.          00      C     IF(EOF(IREAD).EQ.1.0) GO TO 99
   199.          00      C                                                                                    00016000
   200.          00            725   FORMAT(I1,1X,I2,1X,F4.1,1X,F2.0,3(1X,F5.2))
   201.          00      C                                                                                    00016200
   202.          00      C**CHECK CALENDAR YEAR                                                               00016300
   203.          00       7725 IF(CY.GE.70) GO TO 505                                                         00016400
   204.          00            WRITE(IWRI,785)                                                                00016500
   205.          00            785   FORMAT(' ***ERROR: CALENDAR YEAR RANGE IS 70 THRU 99')                   00016600
   206.          00            STOP                                                                           00016700
   207.          00            505   CONTINUE                                                                 00016800
   208.          00            ICYPR = CY                                                                     00016900
   209.          00            IF(CY.GT.95) CY = 95                                                           00017000
   210.          00      C                                                                                    00017100
   211.          00      C**CHECK AMBIENT TEMPERATURE                                                         00017200
   212.          00            IF(TEMP.GE.0.0.AND.TEMP.LE.110.) GO TO 697                                     00017300
   213.          00            WRITE(IWRI,787)                                                                00017400
   214.          00            787   FORMAT(' ***ERROR: VALID TEMPERATURE RANGE IS 0-110 DEG.(F)')            00017500
   215.          00            STOP                                                                           00017600
   216.          00            697   CONTINUE                                                                 00017700
   217.          00      C                                                                                    00017800
   218.          00      C**CHECK INPUT SPEED(S)                                                              00017900
   219.          00            IF(SP3FLG.EQ.1) GO TO 650                                                      00018000
   220.          00            IF(SP1.GT.0.) GO TO 620                                                        00018100
   221.          00            WRITE(IWRI,786)                                                                00018200
   222.          00            786   FORMAT(' ***ERROR: SPEED MUST BE POSITIVE')                              00018300
   223.          00            STOP                                                                           00018400
   224.          00            620   IF(SP1.GT.60.) SP1 = 60.                                                 00018500
   225.          00            IF(SP1.LT.5.) WRITE(IWRI,788)                                                  00018600
   226.          00            788   FORMAT(' **WARNING: AVG. ROUTE SPEED LESS THAN 5 M.P.H.')                00018700
   227.          00            GO TO 695                                                                      00018800
   228.          00      C                                                                                    00018900
   229.          00            650   CONTINUE                                                                 00019000
   230.          00            IF(SPD(1).GT.0.0.AND.SPD(2).GT.0.0.AND.SPD(3).GT.0.) GO TO 670                 00019100
   231.          00            WRITE(IWRI,786)                                                                00019200
   232.          00            STOP                                                                           00019300
   233.          00            670   CONTINUE                                                                 00019400
   234.          00            DO 671 I=1,3                                                                   00019500
   235.          00            IF(SPD(I).LT.5.) WRITE(IWRI,788)                                               00019600
   236.          00            671   IF(SPD(I).GT.60.) SPD(I) = 60.                                           00019700
   237.          00      C                                                                                    00019800
   238.          00            695   CONTINUE                                                                 00019900
   239.          00      C                                                                                    00020000
   240.          00      C**END SPEED CHECK                                                                   00020100
   241.          00      C                                                                                    00020200
   242.          00            IF(SP3FLG.EQ.1) GO TO 520                                                      00020300
   243.          00      C**HERE TO DECOMPOSE SINGLE ENTERED SPEED INTO BAG SPEEDS                            00020400
   244.          00      C     SPD(1) = SP1*1.30                                                              00020500
   245.          00      C     SPD(2) = SP1*.825                                                              00020600
   246.          00      C     SPD(3) = SP1*1.30                                                              00020700
   247.          00            SPD(1) = SP1                                                                   00020560
   248.          00            SPD(2) = SP1                                                                   00020570
   249.          00            SPD(3) = SP1                                                                   00020580
   250.          00      C     SPD(1) = SP1*(1.3777386 - (PCCC*.30/79.42))                                    00020590
   251.          00      C     SPD(2) = SP1*(.75935 + (PCHS*.175/72.72))                                      00020600
   252.          00      C     SPD(3) = SPD(1)                                                                00020610
   253.          00      C                                                                                    00020620
   254.          00      C     PCHSNC = PCCC - PCCO + PCHS                                                    00020630
   255.          00      C     PCHSTB = 100. - PCCC - PCHS                                                    00020640
   256.          00      C     SPD(1) = SP1*(1.41114406 - .0041114406*PCCO)                                   00020650
   257.          00      C     SPD(2) = SP1*(.6162276026 + .003837724*PCHSTB)                                 00020660
   258.          00      C     SPD(3) = SP1*(1.44902449 - .004902449*PCHSNC)                                  00020670
   259.          00            520   CONTINUE                                                                 00020680
   260.          00      C                                                                                    00021600
   261.          00            IF(VMFLAG.EQ.1.AND.IPROMT.EQ.1) WRITE(IWRI,769)                                00027000
   262.          00            769   FORMAT('0ENTER MODAL SPLIT: FORMAT 6(F4.3,1X)')
```

*** A05 ***

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      00          80 EMAD(I1,I2)=EMAD(I1,I2)+X(I3)*SOA*BAD(I3,I2,I1)*(DETER(I1,I2)+1.0)
      00             IF(HOA.EQ.0.0) GO TO 90
      00             DO 70 I3=10,12
      00          70 EMAD(I1,I2)=EMAD(I1,I2)+X(I3)*SOA*BAD(I3,I2,I1)*(DETER(I1,I2)+1.0)
      00          90 CONTINUE
      00         100 CONTINUE
      00         200 X(10)=1.0
      00             X(11)=V
      00             X(12)=V*V
      00             DO 150 I1=1,18
      00             DO 140 I2=2,2
      00             DO 130 I3=10,12
      00         130 EMCRUZ(I1,I2)=EMCRUZ(I1,I2)+X(I3)*BAD(I3,I2,I1)*(DETER(I1,I2)+1.0)
      00         140 CONTINUE
      00         150 CONTINUE
      00       C
      00       C
      00       C
      00       C
      00       C     CALCULATE EMISSIONS OF MODEL YEARS LATER THAN 1975 BASED ON RATIOS
      00       C      OF FTP EMISSIONS FROM DATA SET UPDATE.
      00             MAXAGE=MAXCY-50
      00             MODAGE=75-50
      00             MODAG1=MODAGE+1
      00             IF(MAXAGE.LE.MODAGE) GO TO 510
      00             DO 500 I4=MODAG1,MAXAGE
      00             IAGE=MAXAGE-I4+1
      00             DO 490 I2=2,2
      00             EMADMY(IAGE,I2)=EMAD(IGROUP(I4,ILOC),I2)*UPDATE(I4,ILOC)
      00             EMCRMY(IAGE,I2)=EMCRUZ(IGROUP(I4,ILOC),I2)*UPDATE(I4,ILOC)
      00         490 CONTINUE
      00         500 CONTINUE
      00       C     IDENTIFY EMISSIONS FROM 1975 AND EARLIER BY AGE RATHER
      00       C      THAN BY GROUP.
      00         510 MINAGE=MAXAGE-19
      00             IF(MINAGE.GT.25) GO TO 460
      00             IF(MODAGE.GT.MAXAGE) MODAGE=MAXAGE
      00             DO 450 I4=MINAGE,MODAGE
      00             IAGE=MAXAGE-I4+1
      00             DO 440 I2=2,2
      00             EMADMY(IAGE,I2)=EMAD(IGROUP(I4,ILOC),I2)
      00             EMCRMY(IAGE,I2)=EMCRUZ(IGROUP(I4,ILOC),I2)
      00         440 CONTINUE
      00         450 CONTINUE
      00       C
      00       C
      00       C
      00       C
      00       C     CORRECT EMISSIONS TO SCENARIO AND CALENDAR YEAR OF INTEREST USING
      00       C      CORRECTION FACTORS DERIVED FROM FTP RATIOS.  FIND COMPOSITE LDV
      00       C       EMISSIONS USING FTP TRAVEL WEIGHTING FACTORS.
      00         460 DO 400 I4=MINAGE,MAXAGE
      00             IAGE=MAXAGE-I4+1
      00             DO 390 I2=2,2
      00             IF(IBLIP.EQ.2) GO TO 461
      00             EMAD(IAGE,I2)=EMADMY(IAGE,I2)*FMODY (IAGE)*ACFAC(ITIME,IAGE,I2)
      00             EMCRUZ(IAGE,I2)=EMCRMY(IAGE,I2)*FMODY (IAGE)*ACFAC(ITIME,IAGE,I2)
      00             GO TO 462
      00         461 EMAD(IAGE,I2)=EMADMY(IAGE,I2)*RATIO (IAGE,I5,I2)*FMODY (IAGE)
      00            1*ACFAC(ITIME,IAGE,I2)
      00             EMCRUZ(IAGE,I2)=EMCRMY(IAGE,I2)*RATIO(IAGE,I5,I2)*FMODY (IAGE)
      00            1*ACFAC(ITIME,IAGE,I2)
      00         462 EMAD1(ITIME,I2,I5)=EMAD1(ITIME,I2,I5)+EMAD(IAGE,I2)
      00             EMCR1(ITIME,I2,I5)=EMCR1(ITIME,I2,I5)+EMCRUZ(IAGE,I2)
      00         390 CONTINUE
      00         400 CONTINUE
```

*** A06 ***

```
     65.          00           1JHOTP(5),JCOLDN(5),JCOLDC(5),JHOT(5)
     66.          00            COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
     67.          00           1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
     68.          00            COMMON/PRE5/ICOLDN,ICOLDC,IHOTC
     69.          00            COMMON/REGCOM/IREJN
     70.          00            INTEGER CY
     71.          00            DATA IREAD,IWRI/5,6/
     72.          00            ISTOP=0
     73.          00       C
     74.          00       C
     75.          00       C     READ AND EDIT CARD TYPE 1P
     76.          00       C
     77.          00       C
     78.          00            READ (IREAD,100) (MHEAD(I),I=1,10),(IDATE(I),I=1,3),ILOC,MODRUN,
     79.          00           1LPATH,LNPATH,IMFLAG,MYFLAG,IVTFLG
     80.          00        100 FORMAT(3X,10A2,3I2,7(1X,I1))
     81.          00            IF(ILOC.NE.1.AND.ILOC.NE.2.AND.ILOC.NE.3) GO TO 101
     82.          00            IF(MODRUN.NE.1.AND.MODRUN.NE.2) GO TO 101
     83.          00            IF(LPATH.NE.1.AND.LPATH.NE.2) GO TO 101
     84.          00            IF(LNPATH.NE.1.AND.LNPATH.NE.2) GO TO 101
     85.          00            IF(IMFLAG.NE.0.AND.IMFLAG.NE.1) GO TO 101
     86.          00            IF(MYFLAG.NE.0.AND.MYFLAG.NE.2) GO TO 101
     87.          00            IF(IVTFLG.NE.0.AND.IVTFLG.NE.2) GO TO 101
     88.          00            IREJN=ILOC
     89.          00            CY=IDATE(1)
     90.          00            GO TO 109
     91.          00        101 WRITE(IWRI,102)
     92.          00        102 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 1P)
     93.          00            ISTOP=1
     94.          00            WRITE(IWRI,1010)
     95.          00       1010 FORMAT(5X,47HPROCESSING WILL CONTINUE THROUGH LAST CARD TYPE)
     96.          00       C
     97.          00       C
     98.          00       C     READ AND EDIT CARD TYPE 2P
     99.          00       C
    100.          00       C
    101.          00        109 IF(MYFLAG.EQ.0) GO TO 111
    102.          00            IF(IVTFLG.EQ.0) GO TO 112
    103.          00            READ(IREAD,110) (FMODYR(I),I=1,20),(FVEHTY(J),J=1,6)
    104.          00        110 FORMAT(3X,25F3.1,F2.1)
    105.          00        114 SUM=0.
    106.          00            DO 115 I=1,20
    107.          00        115 SUM=SUM+FMODYR(I)
    108.          00            IF(SUM.GT.0.9999.AND.SUM.LT.1.0001) GO TO 113
    109.          00        104 WRITE(IWRI,103)
    110.          00        103 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 2P)
    111.          00            ISTOP=1
    112.          00            WRITE(IWRI,1010)
    113.          00            GO TO 119
    114.          00        113 IF(IVTFLG.EQ.0) GO TO 119
    115.          00        107 SUM=0.
    116.          00            DO 105 J=1,6
    117.          00        105 SUM=SUM+FVEHTY(J)
    118.          00            IF(SUM.LT.0.9999.OR.SUM.GT.1.0001) GO TO 104
    119.          00            GO TO 119
    120.          00        111 IF(IVTFLG.EQ.0) GO TO 119
    121.          00            READ(IREAD,106) (FVEHTY(J),J=1,6)
    122.          00        106 FORMAT(63X,5F3.1,F2.1)
    123.          00            GO TO 107
    124.          00        112 READ(IREAD,108) (FMODYR(I),I=1,20)
    125.          00        108 FORMAT(3X,20F3.1)
    126.          00            GO TO 114
    127.          00       C
    128.          00       C
    129.          00       C     READ AND EDIT CARD TYPE 3P
    130.          00       C
```

```
@ELT,L CEM.SPFCLX
ELT 8R1 S7401C 04/23/82 15:45:26 (0)
```

*** A08 ***

```
      1.          00            SUBROUTINE SPFCLX(SPARA,SPBACK)                                                    00078400
      2.          00            COMMON/ACOM/AIN1,AIN2,AIN3                                                         00132100
      3.          00      C                                                                                        00132200
      4.          00            REAL AIN1(6,18),AIN2(6,18),AIN3(6,18)                                              00132300
      5.          00            REAL SPARA(3),SPBACK(18,3,3),A(6,18,3)                                             00078600
      6.          00             EQUIVALENCE (AIN1,A)                                                              00132400
      7.          00      C**HC SPEED CORRECTION FACTOR COEFFICIENTS                                                00132500
      8.          00            DATA AIN1/                                                                         00132600
      9.          00           *2.2461,-.29097,0.015889,-.47249E-03,0.69408E-05,-.39280E-07,                       00132700
     10.          00           *2.3103,-.28957,0.015299,-.44649E-03,0.64814E-05,-.36346E-07,                       00132800
     11.          00           *2.1166,-.26999,0.014420,-.43364E-03,0.63074E-05,-.35810E-07,                       00132900
     12.          00           *2.3973,-.29998,0.016135,-.47449E-03,0.72909E-05,-.41977E-07,                       00133000
     13.          00           *2.4087,-.30819,0.016817,-.50684E-03,0.75385E-05,-.43160E-07,                       00133100
     14.          00           *2.2522,-.28499,0.015383,-.45674E-03,0.67349E-05,-.38380E-07,                       00133200
     15.          00           *2.2522,-.28778,0.015682,-.47318E-03,0.70795E-05,-.40846E-07,                       00133300
     16.          00           *2.0278,-.27305,0.015360,-.46030E-03,0.67853E-05,-.38488E-07,                       00133400
     17.          00           *2.1506,-.28362,0.015380,-.44214E-03,0.62873E-05,-.34631E-07,                       00133500
     18.          00           *2.2302,-.29365,0.016240,-.48415E-03,0.71159E-05,-.40286E-07,                       00133600
     19.          00           *2.1223,-.29107,0.016910,-.52615E-03,0.80271E-05,-.47012E-07,                       00133700
     20.          00           *2.1536,-.28345,0.015700,-.46976E-03,0.69383E-05,-.39471E-07,                       00133800
     21.          00           *2.0735,-.28935,0.017300,-.55471E-03,0.86420E-05,-.51311E-07,                       00133900
     22.          00           *2.3495,-.30496,0.016842,-.50962E-03,0.75952E-05,-.43496E-07,                       00134000
     23.          00           *2.1134,-.28568,0.016320,-.50079E-03,0.75507E-05,-.43719E-07,                       00134100
     24.          00           *2.1194,-.29863,0.018450,-.61654E-03,0.99206E-05,-.60402E-07,                       00134200
     25.          00           *2.6838,-.34463,0.019542,-.62572E-03,0.97844E-05,-.58337E-07,                       00134300
     26.          00           *2.3954,-.33578,0.021161,-.73155E-03,0.12072E-04,-.74857E-077                       00134400
     27.          00      C                                                                                        00134500
     28.          00      C**CO SPEED CORRECTION FACTOR COEFFICIENTS                                                00134600
     29.          00            DATA AIN2/                                                                         00134700
     30.          00           *  1.8198,-.25466,.015235,-.48740E-03,.75821E-05,-.44951E-07,                       00134800
     31.          00           *  2.3399,-.29698,.016007,-.47740E-03,.70675E-05,-.40398E-07,                       00134900
     32.          00           *  2.4415,-.29147,.014296,-.38785E-03,.53978E-05,-.28244E-07,                       00135000
     33.          00           *  2.3655,-.30502,.016050,-.47397E-03,.69908E-05,-.39976E-07,                       00135100
     34.          00           *  2.7780,-.31913,.015318,-.42233E-03,.58495E-05,-.31497E-07,                       00135200
     35.          00           *  2.7890,-.32711,.016294,-.46957E-03,.67191E-05,-.37440E-07,                       00135300
     36.          00           *  2.7074,-.33131,.017618,-.53858E-03,.81740E-05,-.47780E-07,                       00135400
     37.          00           *  1.8692,-.27668,.017233,-.55828E-03,.87168E-05,-.51698E-07,                       00135500
     38.          00           *  1.8213,-.27205,.017030,-.55202E-03,.86254E-05,-.51144E-07,                       00135600
     39.          00           *  2.0142,-.29519,.018635,-.62161E-03,.99366E-05,-.59078E-07,                       00135700
     40.          00           *  2.0453,-.31062,.020485,-.70853E-03,.11621E-04,-.71569E-07,                       00135800
     41.          00           *  2.3187,-.34115,.020945,-.66589E-03,.10223E-04,-.59827E-07,                       00135900
     42.          00           *  2.5752,-.32889,.018975,-.62826E-03,.10092E-04,-.61275E-07,                       00136000
     43.          00           *  2.6845,-.33282,.017628,-.52412E-03,.77222E-05,-.43702E-07,                       00136100
     44.          00           *  2.1549,-.32912,.021011,-.68906E-03,.10839E-04,-.64712E-07,                       00136200
     45.          00           *  2.5456,-.36285,.023277,-.81504E-03,.13623E-04,-.85591E-07,                       00136300
     46.          00           *  2.8393,-.36876,.021078,-.67644E-03,.10627E-04,-.63641E-07,                       00136400
     47.          00           *  2.4875,-.39156,.027072,-.97618E-03,.16527E-04,-1.0432E-077                       00136500
     48.          00      C                                                                                        00136600
     49.          00      C**NOX SPEED CORRECTION FACTOR COEFFICIENTS                                               00136700
     50.          00            DATA AIN3/                                                                         00136800
     51.          00           *  2.4442,-.250110,1.3829E-02,-.28703E-03,.20758E-05,0.0,                           00136900
     52.          00           *  1.6863,-.118300,.65697E-02,-.13714E-03,.10085E-05,0.0,                           00137000
     53.          00           *  1.1253,-.039340,-.26864E-02,-.60802E-04,.47729E-06,0.0,                          00137100
     54.          00           *  1.2268,-.044498,-.26248E-02,-.36715E-04,.43429E-06,0.0,                          00137200
     55.          00           *  1.0174,-.011896,-.91437E-03,-.21574E-04,.18250E-06,0.0,                          00137300
     56.          00           *  .98760,-.019567,-.16964E-02,-.40400E-04,.32800E-06,0.0,                          00137400
     57.          00           *  1.1592,-.044454,-.29643E-02,-.66899E-04,.52256E-06,0.0,                          00137500
     58.          00           *  1.8869,-.161290,-.90499E-02,-.18561E-03,.13256E-05,0.0,                          00137600
     59.          00           *  1.5578,-.113030,-.67183E-02,-.14341E-03,.10608E-05,0.0,                          00137700
     60.          00           *  2.0452,-.194010,-.11074E-01,-.23175E-03,.16837E-05,0.0,                          00137800
     61.          00           *  1.6326,-.121860,-.70302E-02,-.14629E-03,.10614E-05,0.0,                          00137900
     62.          00           *  1.4482,-.122440,-.79502E-02,-.17108E-03,.12578E-05,0.0,                          00138000
     63.          00           *  .24597,-.084195,-.34084E-02,-.62988E-04,-.41397E-06,0.0,                         00138100
     64.          00           *  1.2817,-.080487,-.53574E-02,-.11889E-03,.90106E-06,0.0,                          00138200
```

```
*** A09 ***
@ELT,L CEM.TAPEFILE7
ELT 8R1 S7401C 04/23/82 15:45:32 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
     1.          00        .89903E+02  .62701E+02  .49103E+02  .40055E+02  .33243E+02  .28314E+02  .25238
     2.          00        .23423E+02  .22666E+02  .19779E+02
     3.          00        .55009E+02  .55009E+02  .55009E+02  .55009E+02  .55009E+02
     4.          00        .37838E+00  .81255E+00  .35091E+00  .21323E+01  .31401E+00  .34895E+01  .28229
     5.          00        .26321E+00  .66643E+01  .25835E+00  .88186E+01
     6.          00        .19976E+02

END ELT.  ERRORS: NONE. TIME:  0.205 SEC. IMAGE COUNT: 6

@HDG,P  ******  TAPEFILE8  **#***
```

NPATHE	RELOCATABLE	28 MAY 81	12:57:13	56	3	11			QTR	4490
DISPRS	RELOCATABLE	28 MAY 81	12:57:15	57	3	20			QTR	4504
STREET	RELOCATABLE	28 MAY 81	12:57:16	58	2	6			QTR	4527
ROAD	RELOCATABLE	28 MAY 81	12:57:20	59	4	65			QTR	4535
NPATHD	RELOCATABLE	28 MAY 81	12:57:22	60	4	36			QTR	4604
SHORTY	RELOCATABLE	28 MAY 81	12:57:24	61	4	41			QTR	4644
MOBLE1	RELOCATABLE	28 MAY 81	12:59:39	62	3	15			QTR	4689
GRAF	RELOCATABLE	28 MAY 81	13:27:08	63	3	6			QTR	4707
COMPILE	ELT SYMB -Q	28 MAY 81	13:27:47	64		12	5	4 5		4716
MAPPREPRS	ELT SYMB -Q	28 MAY 81	13:32:31	65		9	5	1 2		4728
PREPRS	ABSOLUTE	28 MAY 81	13:32:48	66		788			QTR	4737
RUNTEST11	ELT SYMB	17 JUN 81	17:53:24	67		2	5	0 1		5525
RUNTEST6	ELT SYMB	17 JUN 81	18:09:32	68		2	5	2 3		5527
RUNTEST22	ELT SYMB -Q	01 JUL 81	18:32:55	69		13	5	3 4		5529
INDATA	ELT SYMB -Q	02 JUL 81	15:47:47	70		162	5	4 5		5542
INDATA	RELOCATABLE	02 JUL 81	15:48:12	71	6	197			QTR	5704
RUNTEST18	ELT SYMB	02 JUL 81	16:05:08	72		3	5	4 5		5907
MAPCEMAP	ELT SYMB	14 JUL 81	10:14:51	73		3	5	2 3		5910
TRAF	ELT SYMB	24 AUG 81	15:20:24	74		12	5	1 2		5913
TRAF	RELOCATABLE	24 AUG 81	15:20:40	75	4	9			QTR	5925
CEMAP	ELT SYMB	24 AUG 81	15:24:49	76		13	5	2 3		5938
ANNOUT	ELT SYMB	24 AUG 81	23:54:09	77		28	5	3 4		5951
ANNOUT	RELOCATABLE	24 AUG 81	23:54:13	78	3	41			QTR	5979
STATIS	ELT SYMB	24 AUG 81	23:56:49	79		69	5	5 5		6023
STATIS	RELOCATABLE	24 AUG 81	23:56:55	80	4	77			QTR	6092
FREE	ELT SYMB	22 OCT 81	13:28:06	81		37	5	2 3		6173
FREE	RELOCATABLE	22 OCT 81	13:28:23	82	4	49			QTR	6210
BLKDAT1	ELT SYMB	22 OCT 81	13:30:48	83		9	5	1 2		6263
BLKDAT1	RELOCATABLE	22 OCT 81	13:31:02	84	2	3			QTR	6344
CEMAP	ABSOLUTE	22 OCT 81	13:31:21	85		573			QTR	6279
CEMAP	RELOCATABLE	01 DEC 81	13:22:52	86	3	3			QTR	6350
TAPEFILE3	SYMBOLIC -Q	28 MAY 81	12:03:28	87		4	5	0 1		6853
TAPEFILE4	SYMBOLIC -Q	28 MAY 81	12:03:40	88		7	5	0 1		6860
TAPEFILE5	SYMBOLIC -Q	28 MAY 81	12:03:53	89		157	5	0 1		6867
TAPEFILE6	SYMBOLIC -Q	28 MAY 81	12:04:09	90		3	5	0 1		7024
TAPEFILE7	SYMBOLIC -Q	28 MAY 81	12:04:26	91		5	5	0 1		7027
TAPEFILE8	SYMBOLIC -Q	28 MAY 81	12:04:39	92		13	5	0 1		7032

NEXT AVAILABLE LOCATION- 7045

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

ENTPY POINT TABLE EMPTY
**

@HDG,P ****** ALUH ******

```
      00        C     6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5      00144100
      00              DATA INDX49/
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00144300
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00144400
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.5.6.6.6.6.6.6.6.6.6.6.6.6.6.6.,  00144500
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00144600
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00144700
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00144800
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00144900
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145000
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145100
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145200
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145300
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145400
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145500
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145600
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145700
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00145800
      00             *1.2.2.2.2.2.2.2.3.3.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4./  00145900
      00        C                                                                     00146000
      00        C                                                                     00146100
      00        C     6 6 6 6 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9       00146200
      00        C     6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5   00146300
      00              DATA INDXCA/
      00             *2.2.2.2.2.2.2.2.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00146500
      00             *2.2.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00146600
      00             *2.2.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00146700
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00146800
      00             *1.1.5.5.5.5.5.5.5.5.5.5.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.,  00146900
      00             *1.1.5.5.5.5.5.5.5.5.5.5.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.,  00147000
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00147100
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00147200
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00147300
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00147400
      00             *1.1.5.5.5.5.5.5.5.5.5.5.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.,  00147500
      00             *1.1.5.5.5.5.5.5.5.5.5.5.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.6.,  00147600
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00147700
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00147800
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00147900
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00148000
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4./  00148100
      00        C                                                                     00148200
      00        C                                                                     00148300
      00        C     6 6 6 6 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9       00148400
      00        C     6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5   00148500
      00              DATA INDXHI/
      00             *1.2.2.2.2.2.2.2.3.3.4.5.5.6.7.7.7.8.8.8.8.8.8.8.8.8.8.8.8.8.,  00148700
      00             *1.2.5.5.5.5.5.5.5.5.5.6.6.7.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.,  00148800
      00             *1.2.5.5.5.5.5.5.5.5.5.6.6.7.8.8.8.9.9.9.9.9.9.9.9.9.9.9.9.9.,  00148900
      00             *1.2.5.5.5.5.5.5.5.5.5.6.6.6.6.7.8.8.8.8.8.8.8.8.8.8.8.8.8.8.,  00149000
      00             *1.2.5.5.5.5.5.5.5.5.5.6.6.6.6.7.8.8.8.8.8.8.8.8.8.8.8.8.8.8.,  00149100
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.6.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.,  00149200
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149300
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149400
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149500
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149600
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149700
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149800
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00149900
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00150000
      00             *1.1.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00150100
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.,  00150200
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.,  00150300
      00             *1.1.1.1.1.1.1.1.2.2.3.3.3.3.4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5./  00150400
      00        C                                                                     00150500
      00        C***EXHAUST EMISSION FACTOR INTERCEPT: 49 STATE                       00150600
```

*** B02 ***

```
@ELT,L CEM.DATA3
ELT BR1 S74Q1C 04/23/82 15:44:50 (0)
     1.          03     1P TEST 11                    781215 1 1 1 1 0 0 0
     2.          00     3P   0  0  0  0 73 73  0  02.5 -2.5
     3.          00     4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
     4.          00     5P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.210 SEC. IMAGE COUNT: 4

@HDG,P  ******  DISPRS  ******
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*** B03 ***

*** B04 ***

```
@ELT,L CEM.GRAF
ELT 8R1 S7491C 04/23/82 15:44:56 (0)
      1.          00            SUBROUTINE GRAF
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE IS PASSED THE VARIABLES NEEDED TO PLOT HISTOGRAMS
      5.          00      C     OF PERCENTAGE OF COMMUTERS IN TEN EXPOSURE CLASSES AND THE
      6.          00      C     PROBABILITY OF EXPERIENCING EXPOSURES IN EACH CLASS.  PATHWAY-
      7.          00      C     SPECIFIC AND METEOROLOGY-SPECIFIC OPTIONAL OUTPUT OF THIS TYPE
      8.          00      C     IS ALSO PASSED.
      9.          00      C     DUE TO DIFFERENCES IN COMPUTERS AND LINE PRINTERS, THIS SUBROU-
     10.          00      C     TINE DOES NOT PLOT HISTOGRAMS, BUT IS MEANT RATHER AS A VEHICLE
     11.          00      C     FOR THE ADDITION OF USER-SUPPLIED PLOTTING CODE.  THE VARIABLES
     12.          00      C     TO BE PLOTTED HAVE BEEN PASSED TO THIS ROUTINE AND ARE DEFINED
     13.          00      C     IN COMMENTS BELOW.
     14.          00      C
     15.          00      C
     16.          00            COMMON/IO/IREAD,IWRI,IFILE
     17.          00            COMMON/RUNTYP/MODRUN
     18.          00            COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     19.          00           1JOPT3
     20.          00            COMMON/OPOUT/COMO1A(10,3,5),COMO1P(10,3,5),CMNO2A(10,3,5),
     21.          00           1CMNO2P(10,3,5),EXP3(10,3,2)
     22.          00            COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     23.          00           1EXPSUM(3,2),AVCONC(3,5,2)
     24.          00            DIMENSION ENDPT(11)
     25.          00      C
     26.          00      C     COMPUTING BEGINNING AND ENDING VALUES FOR EACH HISTOGRAM CLASS
     27.          00            ENDPT(1)=0.
     28.          00            DO 100 IP=2,2
     29.          00            DO 100 ICC=2,11
     30.          00        100 ENDPT(ICC)=(ICC-1)*EINTVL(IP)
     31.          00      C
     32.          00      C
     33.          00      C     DEFINITIONS--ANNUAL AND SHORT-TERM MODE
     34.          00      C
     35.          00      C     ENDPT(ICC)          ARE THE VALUE LIMITS ON 10 EXPOSURE CLASSES.
     36.          00      C                         ENDPT(1) AND ENDPT(2) ARE THE LOWER AND UPPER
     37.          00      C                         LIMITS ON CLASS 1, ENDPT(2) AND ENDPT(3) ARE THE
     38.          00      C                         LIMITS ON CLASS 2,.....,ENDPT(10) AND
     39.          00      C                         ENDPT(11) ARE THE LIMITS ON CLASS 10.
     40.          00      C     COMSUM(IC,IP,IAMPM) IS THE PERCENTAGE OF COMMUTERS IN EXPOSURE
     41.          00      C                         CLASS IC FOR POLLUTANT IP DURING TIME PERIOD
     42.          00      C                         IAMPM.
     43.          00      C     CMNSUM(IC,IP,IAMPM) IS THE PROBABILITY OF EXPERIENCING EXPOSURE
     44.          00      C                         LEVELS IN CLASS IC FOR POLLUTANT IP DURING TIME
     45.          00      C                         PERIOD IAMPM.
     46.          00      C     IC                  IS EXPOSURE CLASS INDEX, IC=1,10.
     47.          00      C     IP                  IS POLLUTANT INDEX, IP=2=CO.
     48.          00      C     IAMPM               IS TIME PERIOD INDEX, 1 = AM COMMUTE IN ANNUAL
     49.          00      C                         MODE OR COMMUTE OF INTEREST IN SHORT-TERM MODE,
     50.          00      C                         2 = PM COMMUTE IN ANNUAL MODE.
     51.          00      C     MODRUN              IS FLAG FOR MODE OF MODEL OPERATION, 1 = ANNUAL,
     52.          00      C                         2 = SHORT-TERM.
     53.          00      C
     54.          00      C
     55.          00      C     DEFINITIONS--ANNUAL MODE ONLY
     56.          00      C
     57.          00      C     JOPT1               IS NO. OF PATHWAYS FOR WHICH OPTION 1 WAS CHOSEN
     58.          00      C     JOPT2               IS NO. OF PATHWAYS FOR WHICH OPTION 2 WAS CHOSEN
     59.          00      C     JOPT3               IS NO. OF METEOROLOGICAL CONDITIONS FOR WHICH
     60.          00      C                         OPTION 3 WAS CHOSEN.
     61.          00      C     NOPT1(KP1)          IS THE NUMBER OF THE KP1-TH PATHWAY FOR WHICH
     62.          00      C                         OPTION 1 WAS CHOSEN.
     63.          00      C     NOPT2(KP2)          IS THE NUMBER OF THE KP2-TH PATHWAY FOR WHICH
     64.          00      C                         OPTION 2 WAS CHOSEN.
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   263.          00      C                                                                        00021900
   264.          00            IF(VMFLAG.EQ.1.AND.INFLAG.EQ.1) READ(IREAD,726) VMTMIX             00027400
   265.          00            IF(VMFLAG.EQ.1.AND.INFLAG.EQ.0) READ(IREAD,726) VMTMIX             00027400
   266.          00      C     IF(VMFLAG.EQ.2.AND.INFLAG.EQ.1)READ(IREAD,726)VMTMIX
   267.          00      726   FORMAT(6(F4.3,1X))
   268.          00      C                                                                        00022300
   269.          00      C**HERE READ IN ALUH PARAMS                                              00022400
   270.          00            IF(ALHFLG.EQ.0) GO TO 890                                          00022500
   271.          00            IF(IPROMT.EQ.1) WRITE(IWRI,770`                                    00028000
   272.          00            IF(INFLAG.EQ.0)                                                    00022800
   273.          00           *READ(IREAD,727) AC,XLOAD,TRAILR,ABSHUM                             00022900
   274.          00      C     IF(INFLAG.EQ.1)                                                    00028400
   275.          00      C    *READ(IREAD,727) AC,XLOAD,TRAILR,ABSHUM                             00028500
   276.          00            IF(INFLAG.NE.1) GO TO 890
   277.          00            AC=IAC/100.
   278.          00            XLOAD(1)=0.
   279.          00            XLOAD(2)=0.
   280.          00            XLOAD(3)=0.
   281.          00            TRAILR=0.
   282.          00            ABSHUM=75.
   283.          00      890   CONTINUE                                                           00023000
   284.          00      C                                                                        00023100
   285.          00      727   FORMAT(6(F4.3,1X))
   286.          00      C                                                                        00023300
   287.          00      C**HERE READ IN TRUCK CHAR. PARAMS                                       00023400
   288.          00            IF(TRKFLG.EQ.0) GO TO 895                                          00023500
   289.          00            IF(IPROMT.EQ.1) WRITE(IWRI,771)                                    00029200
   290.          00      771   FORMAT('0ENTER HGWGT,HGCID,HDCID: FORMAT 4(F5.0,1X)')
   291.          00            IF(INFLAG.EQ.0)                                                    00023800
   292.          00           *READ(IREAD,728) HGWGT,HDWGT,HGCID,HDCID                            00023900
   293.          00            IF(INFLAG.EQ.1)                                                    00029600
   294.          00           *READ(IREAD,728) HGWGT,HDWGT,HGCID,HDCID                            00029700
   295.          00      895   CONTINUE                                                           00024000
   296.          00      C                                                                        00024100
   297.          00      728   FORMAT(4(F5.0,1X))
   298.          00      C                                                                        00024300
   299.          00            RETURN                                                             00024400
   300.          00      C                                                                        00024500
   301.          00      C*************************************************************************00024600
   302.          00      C                                                                        00024700
   303.          00      99    CONTINUE                                                           00024800
   304.          00      770   FORMAT('0ENTER AC,XLOAD(3),TRAILR,ABSHUM: FORMAT 6(F4.3,1X)')
   305.          00            IRDFLG = 0                                                         00024900
   306.          00      C     DEBUG SUBCHK                                                       00025000
   307.          0C            RETURN                                                             00025100
   308.          00            END                                                                00025200

END ELT.  ERRORS: NONE. TIME:  0.780 SEC. IMAGE COUNT: 308

$HDG,P  ******  LDVIMX  ******
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```
   395.          00       1010 A=DECEL
   396.          00       1000 CONTINUE
   397.          00       C    CONVERT EMAD TO EXCESS EMISSIONS.
   398.          00            DO 2000 I1=1,6
   399.          00            DO 2010 I2=2,2
   400.          00       2010 EMAD1(ITIME,I2,I1)=EMAD1(ITIME,I2,I1)-EMCR1(ITIME,I2,I1)
   401.          00       2000 CONTINUE
   402.          00       C
   403.          00       C
   404.          00       C
   405.          00       C
   406.          00       C    CONVERT TO GM/VEH-MILE.
   407.          00            DO 2500 ISPD=1,6
   408.          00            DO 2490 IPOLL=2,2
   409.          00            EMAD1(ITIME,IPOLL,ISPD)= EMAD1(ITIME,IPOLL,ISPD)      *RATEM (ITIM
   410.          00           1E,ISPD,IPOLL)
   411.          00       2490 EMCR1(ITIME,IPOLL,ISPD)= EMCR1(ITIME,IPOLL,ISPD)      *RATEM(ITIME
   412.          00           1,ISPD,IPOLL)
   413.          00       2500 CONTINUE
   414.          00       C
   415.          00       C
   416.          00       C
   417.          00       C
   418.          00       7000 CONTINUE
   419.          00            ILOOP=9-MODRUN
   420.          00            GO TO 1500
   421.          00       1100 WRITE(6,5002)
   422.          00       5002 FORMAT(1H0,68HMODAL EMISSIONS CANNOT BE CALCULATED FOR CALENDAR YE
   423.          00           1ARS BEFORE 1970.)
   424.          00            STOP
   425.          00       1500 CONTINUE
   426.          00       9050 FORMAT(1H1)
   427.          00       9999 CONTINUE
   428.          00            CALL OUTPUT(CY)
   429.          00            RETURN
   430.          00            END

END ELT.  ERRORS: NONE. TIME:  0.935 SEC. IMAGE COUNT: 430

@HDG,P  ******  NPATHD  ******
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```
      00      C
      00       119  IF(MODRUN.EQ.2) GO TO 126
      00      C
      00      C     MODEL IS IN ANNUAL MODE
      00      C
      00           IF(LPATH.EQ.2) GO TO 122
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE MODEL COMPUTED
      00      C
      00           READ(IREAD,120) ICOLDN,ICOLDC,IHOTC,ITEMPA,ITEMPP,IACAM,IACPM,
      00          1ACCEL,DECEL
      00       120 FORMAT(3X,7I3,2F4.1)
      00       121 IF(ICOLDN.LT.0.OR.ICOLDN.GT.100) GO TO 131
      00           IF(ICOLDC.LT.0.OR.ICOLDC.GT.100) GO TO 131
      00           IF(IHOTC.LT.0.OR.IHOTC.GT.100) GO TO 131
      00           IF(ACCEL.LE.0.0.OR.DECEL.GE.0.) GO TO 131
      00           IF(MODRUN.EQ.2) GO TO 130
      00           GO TO 125
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE USER-SUPPLIED
      00      C
      00       122 READ(IREAD,123) ITEMPA,ITEMPP,IACAM,IACPM
      00       123 FORMAT(12X,4I3)
      00       125 IF(IACAM.LT.0.OR.IACAM.GT.100) GO TO 131
      00           IF(IACPM.LT.0.OR.IACPM.GT.100) GO TO 131
      00           GO TO 133
      00      C
      00      C     MODEL IS IN SHORT-TERM MODE
      00      C
      00       126 IF(LPATH.EQ.2) GO TO 128
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE MODEL-COMPUTED
      00      C
      00           READ(IREAD,127) ICOLDN,ICOLDC,IHOTC,ITEMPS,IACS,ACCEL,DECEL
      00       127 FORMAT(3X,5I3,2F4.1)
      00           GO TO 121
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE USER-SUPPLIED
      00      C
      00       128 READ(IREAD,129) ITEMPS,IACS
      00       129 FORMAT(12X,2I3)
      00       130 IF(IACS.LT.0.OR.IACS.GT.100) GO TO 131
      00           GO TO 133
      00       131 WRITE(IWRI,132)
      00       132 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 3P)
      00           ISTOP=1
      00           WRITE(IWRI,1010)
      00      C
      00      C
      00      C     READ AND EDIT CARD TYPE 4P
      00      C
      00      C
      00       133 IF(LNPATH.EQ.2) GO TO 144
      00           IF(MODRUN.EQ.2) GO TO 136
      00      C
      00      C     MODEL IS IN ANNUAL MODE
      00      C
      00           READ (IREAD,134) (JCLDNA(L),L=1,5),(JCLDCA(L),L=1,5),(JHOTA(L),
      00          1L=1,5)
      00       134 FORMAT(3X,15I3)
      00           DO 135 L=1,5
      00           IF(JCLDNA(L).LT.0.OR.JCLDNA(L).GT.100) GO TO 138
      00           IF(JCLDCA(L).LT.0.OR.JCLDCA(L).GT.100) GO TO 138
      00           IF(JHOTA(L).LT.0.OR.JHOTA(L).GT.100) GO TO 138
      00       135 CONTINUE
      00           GO TO 140
```

*** B07 ***

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     65.          00          *  1.5345,-.125670,.78592E-02,-.16943E-03,.12549E-05,0.0,                  00138300
     66.          00          *  .70481,-.038153,-.17391E-02,.32614E-04,-.20385E-06,0.0,                 00138400
     67.          00          *  .78384,-.52855E-03,.10603E-02,-.31935E-04,.29039E-06,0.0,               00138500
     68.          00          *  .94213,-.042324,.38625E-02,-.93985E-04,.75388E-06,0.0  /                00138600
     69.          00     C                                                                               00078700
     70.          00          DO 30 IP = 1,3                                                             00078800
     71.          00             DO 20 IG = 1,18                                                         00078900
     72.          00                IGG = IG                                                             00079000
     73.          00                DO 10 IS = 1,3                                                       00079100
     74.          00                   SUM = A(6,IGG,IP)                                                 00079200
     75.          00                   S = SPARA(IS)                                                     00079300
     76.          00                  DO 5 I = 1,5                                                       00079400
     77.          00                   SUM = SUM*S + A(6-I,IGG,IP)                                       00079500
     78.          00     5             CONTINUE                                                          00079600
     79.          00                  SCF=EXP(SUM)                                                       00079700
     80.          00                  IF(IP.EQ.3) SCF=SUM                                                00079800
     81.          00                  SPBACK(IG,IS,IP) = SCF                                             00079900
     82.          00     10           CONTINUE                                                          00080000
     83.          00     20        CONTINUE                                                             00080100
     84.          00     30     CONTINUE                                                                00080200
     85.          00            RETURN                                                                   00080300
     86.          00     C      DEBUG SUBCHK                                                            00080400
     87.          00            END                                                                      00080500

END ELT.  ERRORS: NONE. TIME:  0.353 SEC. IMAGE COUNT: 87

@HDG,P  ******  STATIS  ******
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```
@ELT,L CEM.TAPEFILE8
ELT 8R1 S74Q1C 04/23/82 15:45:33 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
     1.          00      1M  TEST 22              781215 2 1 1 1
     2.          00      2M  2 3 3          2.0018939
     3.          00      3M  1 111 1500. 1200. 1             1 0     02214 0 0         1. 1.     2000. 2000.01
     4.          00      3M  1 211 1500. 1200. 1             1 U     02214 0 0     2000.2000.    8000. 8000.12
     5.          00      3M  1 311 1500. 1200. 1             1 0     02214 0 0     4000.4000.    8000. 8000.32
     6.          00      3M  2 112 1000.  800. 1             1 0     02212 0 0         1. 1.     2000. 2000.01
     7.          00      3M  2 223  500.  400. 1             1 0     02212 0 0         1. 1.     2000. 2000.22
     8.          00      3M  2 323  500.  400. 1             1 0     02212 0 0         1. 1.     2000. 2000.21
     9.          00      4M  1 2  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0.  0.  0.  0.  0.0.0.6.6.
    10.          00      4M  1 3  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0.150012001000100015150.0.
    11.          00      4M  2 2500.400.400.300.1500150015001500 0. 0. 0. 0.  0.  0.  0.  0.0.0.0.0.
    12.          00      4M  2 3500.400.400.300.150015001500150060.60.30.30.  0.  0.  0.  0.0.0.0.0.
    13.          00       5M    1    1
    14.          00       6M 10   .2   .2   .2   .2   .2
    15.          00      7M   11.0        1.0         6562.      100300.    1
    16.          00      7M   26563.      6553.       3281.      100000.    1
    17.          00       8M 1.0        120 4

END ELT.  ERRORS: NONE. TIME:  0.213 SEC. IMAGE COUNT: 17

@HDG,P  ******  TFCALX  ******
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```
@ELT L  CEM.ALUM
ELT 8R1 S7491C 04/23/82 15:44:37 (0)
```

*** C01 ***

```
      1.            00        SUBROUTINE ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)                    00113100
      2.            00  C                                                                             00113200
      3.            00        COMMON/RET1/ALHRET(20,4,3)                                              00113300
      4.            00  C                                                                             00113400
      5.            00        INTEGER CY                                                              00113500
      6.            00        REAL XLOAD(3)                                                           00113700
      7.            00        REAL PCW(20)                                                            00120400
      8.            00        REAL A(20,3,3),U(20,3,3),L(3,3),H(3)                                    00113900
      9.            00        REAL TCFA(3),TCFB(3),TCFC(3)                                            00114000
     10.            00        REAL CFLD(3)                                                            00114100
     11.            00        REAL ACCF(3),PCWAC(45)                                                  00114200
     12.            00  C                                                                             00114300
     13.            00        DATA ACCF/1.13,1.18,1.18/                                               00114400
     14.            00        DATA CFLD/1.06,1.20,1.03/                                               00114500
     15.            00        DATA PCWAC/15*.54,3*.66,4*.75,3*.81,20*.81/                             00114600
     16.            00        DATA TCFA/1.32,2.15,1.16/,TCFB/.75,1.55,1.28/,TCFC/.43,.39,.92/         00114700
     17.            00  C  IN TCFA ABOVE, 2ND VALUE SHOULD BE 2.15..IT IS 1.15 FOR ORE. CF.           00114800
     18.            00  C                                                                             00114900
     19.            00        PCCOLD=PCCC *.01                                                        00115000
     20.            00  C                                                                             00115100
     21.            00        DO 207 IP=1,3                                                           00115200
     22.            00        H(IP)=1.                                                                00115300
     23.            00        DO 207 IM=1,3                                                           00115400
     24.            00        L(IP,IM)=1.                                                             00115500
     25.            00        DO 207 IT=1,20                                                          00115600
     26.            00        A(IT,IP,IM)=1.                                                          00115700
     27.            00        U(IT,IP,IM)=1.                                                          00115800
     28.            00        ALHRET(IT,4,IP) = 1.                                                    00115900
     29.            00  207   CONTINUE                                                                00116000
     30.            00  C                                                                             00116100
     31.            00        DO 500 IP = 1,3                                                         00116200
     32.            00  C                                                                             00116300
     33.            00        DO 400 IMODE=1,3                                                        00116400
     34.            00  C                                                                             00116500
     35.            00        IF(IMODE.EQ.3) GO TO 15                                                 00116600
     36.            00  C*****A:  AIR CONDITIONING CORRECTION FACTOR                                  00116700
     37.            00        DO 90 I=1,20                                                            00116800
     38.            00        IMY = CY - (20-I) - 50                                                  00116900
     39.            00        PCW(I)=PCWAC(IMY)                                                       00117000
     40.            00        A(I,IMODE,IP) = AC*PCWAC(IMY)*(ACCF(IP)-1.) + 1.0                       00117100
     41.            00  90    CONTINUE                                                                00117200
     42.            00  C                                                                             00117300
     43.            00         IF(IMODE.EQ.2) GO TO 15                                                00117400
     44.            00  C*****U:  TRAILER TOWING CORRECTION FACTOR                                    00117500
     45.            00        DO 91 I=1,20                                                            00117600
     46.            00        IMY=CY-(20-I)-50                                                        00117700
     47.            00        IF(IMY.GT.24) GO TO 77                                                  00117800
     48.            00        CFA=TCFA(IP)                                                            00117900
     49.            00        GO TO 78                                                                00118000
     50.            00  77    CONTINUE                                                                00118100
     51.            00        CFA=(PCCOLD*TCFA(IP) + (1.-PCCOLD)*TCFB(IP))/                           00118200
     52.            00       *              (PCCOLD + (1.-PCCOLD)*TCFC(IP))                           00118300
     53.            00  78    CONTINUE                                                                00118400
     54.            00  C                                                                             00118500
     55.            00        U(I,IMODE,IP) = TRAILR*(CFA-1.) + 1.0                                   00118600
     56.            00  C                                                                             00118700
     57.            00  91    CONTINUE                                                                00118800
     58.            00  C                                                                             00118900
     59.            00  C                                                                             00119000
     60.            00  15    CONTINUE                                                                00119100
     61.            00  C*****L:  ADDITIONAL LOADING CORRECTION FACTOR                                00119200
     62.            00        L(IMODE,IP) = XLOAD(IMODE)*(CFLD(IP)-1.) + 1.                           00119300
     63.            00  C                                                                             00119400
     64.            00  400   CONTINUE                                                                00119500
```

```
      00          DATA BASE49/                                                  00150700
      00           * 4.45,  2.43,  1.13,  0.13,  0.13,  0.13, 0.0 , 0.0 , 0.0 , 0.0 ,00150800
      00           * 68.30, 31.14, 18.60,  3.00,  1.40,  1.40, 0.0 , 0.0 , 0.0 , 0.0 ,00150900
      00           *  3.58,  4.43,  2.98,  2.42,  1.50,  0.29, 0.0 , 0.0 , 0.0 , 0.0 ,00151000
      00           *  4.45,  2.43,  1.11,  0.94,  0.31,  0.31, 0.0 , 0.0 , 0.0 , 0.0 ,00151100
      00           * 68.30, 31.14, 16.10, 14.50,  3.87,  3.87, 0.0 , 0.0 , 0.0 , 0.0 ,00151200
      00           *  3.58,  4.43,  2.98,  2.45,  1.73,  0.41, 0.0 , 0.0 , 0.0 , 0.0 ,00151300
      00           *  5.99,  2.90,  0.96,  0.31,  0.31,  0.31, 0.0 , 0.0 , 0.0 , 0.0 ,00151400
      00           * 78.70, 32.40, 14.50,  3.87,  3.87,  3.87, 0.0 , 0.0 , 0.0 , 0.0 ,00151500
      00           *  6.49,  5.04,  1.73,  0.41,  0.41,  0.41, 0.0 , 0.0 , 0.0 , 0.0 ,00151600
      00           * 23.90, 18.54, 22.02,  5.22,  1.46,  1.46, 0.0 , 0.0 , 0.0 , 0.0 ,00151700
      00           *272.90,212.70,218.80,191.90, 15.38, 15.38, 0.0 , 0.0 , 0.0 , 0.0 ,00151800
      00           *  8.80, 12.80, 10.50,  2.10,  3.99,  3.99, 0.0 , 0.0 , 0.0 , 0.0 ,00151900
      00           *  4.30,  4.30,  4.50,  2.85,  2.85,  2.85, 0.0 , 0.0 , 0.0 , 0.0 ,00152000
      00           * 35.10, 27.00, 27.00, 27.00, 27.00, 27.00, 0.0 , 0.0 , 0.0 , 0.0 ,00152100
      00           * 21.40, 20.10, 19.90,  5.35,  5.35,  5.35, 0.0 , 0.0 , 0.0 , 0.0 ,00152200
      00           *  8.96,  4.70,  3.82,  0.29,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00152300
      00           * 34.40, 20.27, 14.86,  2.71,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00152400
      00           *  0.14,  0.28,  0.56,  0.04,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00152500
      00     C                                                                   00152600
      00     C***EXHAUST EMISSION FACTOR INTERCEPT: CALIFORNIA                   00152700
      00          DATA BASECA/                                                  00152800
      00           * 4.45,  2.00,  0.29,  0.15,  0.15,  0.15, 0.0 , 0.0 , 0.0 , 0.0 ,00152900
      00           * 68.30, 30.42,  3.80,  3.80,  3.00,  3.00, 0.0 , 0.0 , 0.0 , 0.0 ,00153000
      00           *  3.58,  3.92,  3.12,  1.50,  1.10,  0.29, 0.0 , 0.0 , 0.0 , 0.0 ,00153100
      00           *  4.45,  2.43,  1.11,  0.29,  0.15,  0.15, 0.0 , 0.0 , 0.0 , 0.0 ,00153200
      00           * 68.30, 31.14, 16.10, 13.70,  3.80,  3.80, 0.0 , 0.0 , 0.0 , 0.0 ,00153300
      00           *  3.58,  4.43,  2.98,  1.50,  1.28,  0.54, 0.0 , 0.0 , 0.0 , 0.0 ,00153400
      00           *  5.99,  2.90,  0.29,  0.16,  0.16,  0.16, 0.0 , 0.0 , 0.0 , 0.0 ,00153500
      00           * 78.70, 32.40, 13.70,  3.80,  3.80,  3.80, 0.0 , 0.0 , 0.0 , 0.0 ,00153600
      00           *  6.49,  5.04,  1.73,  0.44,  0.44,  0.44, 0.0 , 0.0 , 0.0 , 0.0 ,00153700
      00           * 23.90, 18.54, 22.02, 18.16,  5.22,  1.46, 0.0 , 0.0 , 0.0 , 0.0 ,00153800
      00           *272.90,212.70,218.80,209.00,191.90, 15.38, 15.38, 0.0 , 0.0 , 0.0 ,00153900
      00           *  8.80, 12.80, 10.50,  7.50,  8.04,  3.99, 0.0 , 0.0 , 0.0 , 0.0 ,00154000
      00           *  4.30,  4.30,  4.50,  2.85,  2.85,  2.85, 0.0 , 0.0 , 0.0 , 0.0 ,00154100
      00           * 35.10, 27.00, 27.00, 27.00, 27.00, 27.00,27.00, 0.0 , 0.0 , 0.0 ,00154200
      00           * 21.40, 20.10, 18.61, 16.30,  5.35,  5.35, 5.35, 0.0 , 0.0 , 0.0 ,00154300
      00           *  8.96,  4.70,  3.82,  0.82,  0.29,  0.29, 0.29, 0.29, 0.29, 0.29,00154400
      00           * 34.40, 20.27, 14.86,  2.71,  2.71,  2.71, 2.71, 2.71, 2.71, 2.71,00154500
      00           *  0.14,  0.28,  0.56,  0.04,  0.04,  0.04, 0.04, 0.04, 0.04, 0.04,00154600
      00     C                                                                   00154700
      00     C***EXHAUST EMISSION FACTOR INTERCEPT: HIGH ALTITUDE                00154800
      00          DATA BASEHI/                                                  00154900
      00           *  6.03,  4.07,  1.83,  0.70,  1.83,  0.21, 0.21, 0.13, 0.13, 0.13,00155000
      00           *110.04, 76.73, 38.31, 10.30, 38.31,  6.18, 2.88, 1.40, 1.40, 1.40,00155100
      00           *  1.96,  3.00,  1.94,  1.50,  1.90,  1.50, 0.93, 0.18, 0.29, 0.29,00155200
      00           *  6.03,  4.07,  1.79,  1.11,  1.79,  1.56, 0.47, 0.31, 0.0 , 0.0 ,00155300
      00           *110.04, 76.73, 33.15, 16.10, 33.15, 29.90, 8.00, 3.87, 0.0 , 0.0 ,00155400
      00           *  1.96,  3.00,  1.94,  1.52,  2.45,  1.52, 1.07, 1.73, 0.41, 0.0 ,00155500
      00           *  8.12,  4.86,  1.52,  0.41,  0.41,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00155600
      00           *127.50, 79.90, 29.90,  8.00,  3.87,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00155700
      00           *  3.50,  3.41,  1.07,  1.72,  0.41,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00155800
      00           * 32.40, 31.05, 36.77,  8.74,  2.35,  1.56, 0.0 , 0.0 , 0.0 , 0.0 ,00155900
      00           *441.50,344.20,353.20,310.90, 31.70, 15.38, 0.0 , 0.0 , 0.0 , 0.0 ,00156000
      00           *  4.82,  8.67,  6.84,  2.92,  3.69,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156100
      00           *  5.80,  6.10,  6.10,  3.85,  2.85,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156200
      00           * 56.80, 43.70, 43.70, 43.70, 27.00,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156300
      00           * 11.80, 13.10, 12.90,  5.35,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156400
      00           * 12.10,  7.97,  6.38,  0.45,  0.29,  0.29, 0.29, 0.29, 0.29, 0.29,00156500
      00           * 47.10, 27.80, 20.40,  5.58,  2.71,  2.71, 2.71, 2.71, 2.71, 2.71,00156600
      00           *  0.08,  0.18,  0.36,  0.03,  0.04,  0.04, 0.04, 0.04, 0.04, 0.04,00156700
      00     C                                                                   00156800
      00     C***EXHAUST EMISSION FACTOR SLOPE: 49 STATE                         00156900
      00          DATA DEL49/                                                   00157000
      00           * 0.58, 0.53, 0.23, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,00157100
      00           * 3.06, 6.15, 2.80, 2.30, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,00157200
```

*** CO2 ***

*** C03 ***

```
@ELT,L CEM.DISPRS
ELT 8R1 S7491C 04/23/82 15:44:51 (0)
      1.            00          SUBROUTINE DISPRS
      2.            00     C
      3.            00     C
      4.            00     C    THIS SUBROUTINE CONTROLS COMPUTATION OF DISPERSION OF PATHWAY
      5.            00     C    SOURCE EMISSIONS ACCORDING TO WHETHER A PATHWAY IS OR OS NOT A
      6.            00     C    STREET CANYON.  THE ROUTINE ALSO CONTROLS COMPUTATION OF
      7.            00     C    DISPERSION OF NON-PATHWAY SOURCE EMISSIONS
      8.            00     C
      9.            00     C
     10.            00          COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     11.            00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     12.            00          COMMON/LSTSEG/CNPLST(5,4)
     13.            00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     14.            00          COMMON/RUNTYP/MODRUN
     15.            00          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTT(5,2)
     16.            00          COMMON/NOSTRT/EXNSAM(5,80,3),EXNSPM(5,80,3)
     17.            00          COMMON/METST/WS,IWD,ISTAB
     18.            00          COMMON/STRT/EXST(5,3,2)
     19.            00          DIMENSION C(2,80,3),TT(2)
     20.            00          DO 5 IPATH=1,NPATHS
     21.            00          DO 3 IAMPM=1,2
     22.            00        3 TOTTT(IPATH,IAMPM)=0.0
     23.            00          DO 5 IP=1,2
     24.            00          DO 4 IAMPM=1,2
     25.            00        4 EXST(IPATH,IP,IAMPM)=0.0
     26.            00          DO 5 ISTWD=1,80
     27.            00          EXNSAM(IPATH,ISTWD,IP)=0.0
     28.            00        5 EXNSPM(IPATH,ISTWD,IP)=0.0
     29.            00     C
     30.            00     C    COMPUTE DISPERSION OF PATHWAY SOURCE EMISSIONS
     31.            00     C
     32.            00          IF(MODRUN.EQ.2) GO TO 60
     33.            00     C
     34.            00     C    MODEL IS IN ANNUAL MODE
     35.            00          DO 50 IPATH=1,NPATHS
     36.            00          NSEGS=NSEG(IPATH)
     37.            00          DO 50 LINK=1,NSEGS
     38.            00          DO 10 IAMPM=1,2
     39.            00          TT(IAMPM)=(TT1(IPATH,LINK,IAMPM)+TT2(IPATH,LINK,IAMPM))*60.
     40.            00       10 TOTTT(IPATH,IAMPM)=TOTTT(IPATH,IAMPM)+TT(IAMPM)
     41.            00     C
     42.            00     C    DETERMINE IF SEGMENT IS A STREET CANYON OR NOT AND CALL APPRO-
     43.            00     C    PRIATE DISPERSION ROUTINE
     44.            00          IF(LINTOP(IPATH,LINK).EQ.2) GO TO 20
     45.            00     C
     46.            00     C    SEGMENT IS NOT A STREET CANYON--COMPUTE AND SUM NORMALIZED
     47.            00     C    EXPOSURES
     48.            00          CALL ROAD(2,16,1,5,3,IPATH,LINK,C)
     49.            00     C
     50.            00     C
     51.            00     C    IF MORE POLLUTANTS ARE TO BE INCLUDED, A POLLUTANT DO LOOP MUST BE
     52.            00     C    ADDED AND THE CONCENTRATION ARRAY IN ROAD AND THE EXPOSURE ARRAYS
     53.            00     C    HERE MUST BE CHANGED TO ACCOMMODATE THE ADDITIONAL POLLUTANTS.
     54.            00     C    THIS WAS NOT DONE BECAUSE OF STORAGE LIMITATIONS
     55.            00     C
     56.            00     C
     57.            00          DO 15 IWSTEM=1,3
     58.            00          DO 15 ISTWD=1,80
     59.            00     C    UNITS OF EXPOSURE EXNSAM ARE G/M**2
     60.            00          EXNSAM(IPATH,ISTWD,IWSTEM)=EXNSAM(IPATH,ISTWD,IWSTEM)+C(1,ISTWD,
     61.            00         1IWSTEM)*TT(1)
     62.            00       15 EXNSPM(IPATH,ISTWD,IWSTEM)=EXNSPM(IPATH,ISTWD,IWSTEM)+C(2,ISTWD,
     63.            00         1IWSTEM)*TT(2)
     64.            00          GO TO 50
```

```
    65.           00     C     NOPT3              IS THE PATHWAY NUMBER FOR WHICH OPTION 3 WAS
    66.           00     C                        CHOSEN.
    67.           00     C     NMET(IOPT3)        IS THE NUMBER OF THE IOPT3-TH SET OF METEOROLO-
    68.           00     C                        GICAL CONDITIONS FOR WHICH OPTION 3 WAS CHOSEN.
    69.           00     C     COM01A(IC,IP,KP1) IS THE PERCENTAGE OF COMMUTERS IN CLASS IC FOR
    70.           00     C                        POLLUTANT IP ON THE KP1-TH PATHWAY CHOSEN FOR
    71.           00     C                        OPTION 1 OUTPUT FOR THE AM COMMUTE.
    72.           00     C     COM01P(IC,IP,KP1) IS THE PERCENTAGE OF COMMUTERS IN CLASS IC FOR
    73.           00     C                        POLLUTANT IP ON THE KP1-TH PATHWAY CHOSEN FOR
    74.           00     C                        OPTION 1 OUTPUT FOR THE PM COMMUTE.
    75.           00     C     CMN02A(IC,IP,KP2) IS THE PROBABILITY OF EXPERIENCING EXPOSURE
    76.           00     C                        LEVELS IN CLASS IC FOR POLLUTANT IP ON THE
    77.           00     C                        KP2-TH PATHWAY CHOSEN FOR OPTION 2 OUTPUT FOR
    78.           00     C                        THE AM COMMUTE.
    79.           00     C     CMN02P(IC,IP,KP2) IS THE PROBABILITY OF EXPERIENCING EXPOSURE
    80.           00     C                        LEVELS IN CLASS IC FOR POLLUTANT IP ON THE
    81.           00     C                        KP2-TH PATHWAY CHOSEN FOR OPTION 2 OUTPUT FOR
    82.           00     C                        THE PM COMMUTE.
    83.           00     C     EXP3(IOPT3,IP,IAMPM) IS THE EXPOSURE ON PATHWAY NOPT3 FOR POLLU-
    84.           00     C                        TANT IP FOR TIME PERIOD IAMPM FOR THE IOPT3-TH
    85.           00     C                        SET OF METEOROLOGICAL CONDITIONS CHOSEN WITH
    86.           00     C                        OPTION 3.
    87.           00     C     KP1                IS THE INDEX FOR PATHWAYS CHOSEN WITH OPTION 1.
    88.           00     C     KP2                IS THE INDEX FOR PATHWAYS CHOSEN WITH OPTION 2.
    89.           00     C     IOPT3              IS THE INDEX FOR METEOROLOGICAL CONDITIONS
    90.           00     C                        CHOSEN WITH OPTION 3.
    91.           00     C
    92.           00     C
    93.           00     C     TO CONSTRUCT THE HISTOGRAMS
    94.           00     C
    95.           00     C
    96.           00     C     THE VALUE LIMITS OF THE EXPOSURE CLASSES SHOULD BE PLOTTED ON THE
    97.           00     C     ABSCISSA.
    98.           00     C     THE PERCENTAGE OF COMMUTERS OR THE PROBABILITIES SHOULD BE INDICA-
    99.           00     C     TED ON THE ORDINATE BY COLUMN HEIGHT.
   100.           00     C
   101.           00     C
   102.           00     C     WHEN THIS SUBROUTINE IS CALLED, THE FOLLOWING MESSAGE IS PRINTED.
   103.           00     C
   104.           00           WRITE(IWRI,15)
   105.           00        15 FORMAT(1H1,2X,64HDUE TO COMPUTER-MAKE INCOMPATIBILITIES, SUBROUTIN
   106.           00          1E GRAF DOES NOT,27H ATTEMPT TO PLOT HISTOGRAMS./ 3X,58HHOWEVER, GR
   107.           00          2AF DOES CONTAIN THE NECESSARY COMMON STATEMENTS,65H AND INSTRUCTIO
   108.           00          3NS FOR THE USER TO SUPPLY PLOTTING CODE TO PRODUCE/3X,15H THE HIST
   109.           00          4OGRAMS)
   110.           00           RETURN
   111.           00           END

END ELT.  ERRORS: NONE. TIME:  0.363 SEC. IMAGE COUNT: 111

?HDG,P  ******  INDATA  ******
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```
@ELT L  CEM,LDVIMX
ELT 8R1 S7491C 04/23/82 15:45:03 (0)
     1.          00            SUBROUTINE LDVIMX(CY)
     2.          00      C                                                                                00114200
     3.          00            COMMON/BEFCOM/BEF(20,1,18)
     4.          00            COMMON/IMCOM/ICYIM,ISTRN,IMTFLG,MODYR1,MODYR2                            00114400
     5.          00            INTEGER CYP
     6.          00            COMMON/IMCRED/PCIM                                                       00114500
     7.          00      C                                                                              00114600
     8.          00            INTEGER CY,CYIMP,CYIP1,DELY,DEL2,DEL                                     00114700
     9.          00            INTEGER PCIM(19,5,    16)                                                00114800
    10.          00      C**IN PCIM: DEL,ISTRIN,ITECH,IPROGM,IPOL                                       00114900
    11.          00      C                                                                              00115000
    12.          00      C*****************************************************************************00115100
    13.          00      C                                                                              00115200
    14.          00            IPROGM = 1 + IMTFLG                                                      00115300
    15.          00            IF(ISTRN.LT.10.OR.ISTRN.GT.50) STOP600
    16.          00            IREM=ISTRN-(ISTRN/10)*10
    17.          00            REM=IREM*.1
    18.          00            STRN=(ISTRN+0.5)*0.1
    19.          00            ISTRIN=STRN
    20.          00            CYIMP = ICYIM                                                            00115500
    21.          00            CYIP1 = ICYIM + 1                                                        00115600
    22.          00      C                                                                              00115700
    23.          00            DO 100 IPOL=1,2                                                          00115800
    24.          00      C                                                                              00116000
    25.          00            CYP=1
    26.          00                DELY = CY - CYIMP                                                    00116200
    27.          00      C                                                                              00116300
    28.          00            DO 90 I = 1,20                                                           00116400
    29.          00               MY = CY - (20-I)                                                      00116500
    30.          00               MYP = MY - 50                                                         00116600
    31.          00               DEL2 = MY - CYIMP                                                     00116700
    32.          00      C                                                                              00116800
    33.          00            IF(MY.LT.MODYR1.OR.MY.GT.MODYR2) GO TO 90                                00116900
    34.          00      C                                                                              00117000
    35.          00            IF(MY.LE.CYIMP) DEL = DELY                                               00117100
    36.          00            IF(MY.GT.CYIMP) DEL = DELY - DEL2                                        00117200
    37.          00            IF(DEL.GT.19) DEL = 19                                                   00117300
    38.          00      C                                                                              00117400
    39.          00      C*NOW DEL IS INDEX FOR I/M AND MECH. TRAINING                                  00117500
    40.          00      C*TEST FOR TECH. I, II, III, OR IV                                             00117600
    41.          00            DO 80 IMOD=1,4
    42.          00            IMODE=IMOD
    43.          00            IF(IMOD.EQ.4)IMODE=6
    44.          00            IF(IMOD.EQ.2)GO TO 72
    45.          00            IF(IMOD.EQ.3) GO TO 72
    46.          00            IF(IMOD.EQ.4) GO TO 74
    47.          00            IF(MY.LT.75) ITECH = 1                                                   00117700
    48.          00            IF(MY.GE.75.AND.MY.LE.79) ITECH = 2                                      00117800
    49.          00            IF(MY.EQ.80) ITECH = 3                                                   00117900
    50.          00            IF(MY.GE.81) ITECH = 4                                                   00118000
    51.          00            GO TO 77
    52.          00      72    CONTINUE
    53.          00            IF(MY.LT.83) ITECH=1
    54.          00            IF(MY.GT.82) ITECH=2
    55.          00            GO TO 77
    56.          00      74    CONTINUE
    57.          00            ITECH=1
    58.          00      77    CONTINUE
    59.          00
    60.          00            IF(DEL.EQ.0) PCRED = 0.0                                                 00118200
    61.          00            IF(DEL.GT.0.AND.ISTRIN.LT.5)
    62.          00           *          PCRED=PCIM(DEL,ISTRIN,ITECH+(IPROGM-1)*4+(IPOL-1)*8)
    63.          00           *  *.01 +REM*(PCIM(DEL,ISTRIN+1,ITECH+(IPROGM-1)*4+(IPOL-1)*8)-
    64.          00           *PCIM(DEL,ISTRIN,ITECH+(IPROGM-1)*4+(IPOL-1)*8))*.01
```

*** C05 ***

```
@ELT,L CEM.NPATHD
ELT 8R1 S7491C 04/23/82 15:45:14 (0)
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```
      1.          00          SUBROUTINE NPATHD
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE COMPUTES THE PORTION OF NORMALIZED EXPOSURE ON
      5.          00      C     EACH PATHWAY SEGMENT ARISING FROM NON-PATHWAY POLLUTANT SOURCES
      6.          00      C
      7.          00      C
      8.          00            COMMON/RUNTYP/MODRUN
      9.          00            COMMON/METST/WS,IWD,ISTAB
     10.          00            COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
     11.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     12.          00            COMMON/GRID/XG(500),YG(500),GVMT(500),IGLOC(500),GEMIS(500),
     13.          00           1GSIZE(500)
     14.          00            COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     15.          00            COMMON/IO/IREAD,IWRI,IFILE
     16.          00            COMMON/NOPATH/EXNPAM(5,5,3),EXNPPM(5,5,3)
     17.          00            COMMON/LSTSEG/CNPLST(5,3)
     18.          00            COMMON/GREMIS/EGRID(500,3,2)
     19.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTT(5,2)
     20.          00            DIMENSION CONST(5),JGRID1(5,20),JGRID2(5,20),JGRIDM(
     21.          00           15,20)
     22.          00            DATA CONST/50.,50.,200.,225.,600./
     23.          00      C
     24.          00      C     INITIALIZE EXPOSURE ARRAYS
     25.          00            IF(MODRUN.EQ.1) GO TO 6
     26.          00            DO 5 IPATH=1,NPATHS
     27.          00            DO 5 IP=2,2
     28.          00         5  EXNPAM(IPATH,1,IP)=0.
     29.          00            GO TO 15
     30.          00         6  DO 10 IS=1,5
     31.          00            DO 10 IPATH=1,NPATHS
     32.          00            DO 10 IP=2,2
     33.          00            EXNPAM(IPATH,IS,IP)=0.
     34.          00            EXNPPM(IPATH,IS,IP)=0.
     35.          00        10  CONTINUE
     36.          00      C
     37.          00      C     LOCATE GRID SQUARES IN WHICH END POINTS AND MIDPOINT OF EACH
     38.          00      C     SEGMENT LIE
     39.          00      C
     40.          00        15  DO 100 IPATH=1,NPATHS
     41.          00            NSEGS=NSEG(IPATH)
     42.          00            DO 80 LINK=1,NSEGS
     43.          00            JGRID1(IPATH,LINK)=0
     44.          00            JGRID2(IPATH,LINK)=0
     45.          00            JGRIDM(IPATH,LINK)=0
     46.          00      C     COMPUTE MIDPOINT OF SEGMENT
     47.          00            XMID=(X1(IPATH,LINK)+X2(IPATH,LINK))*CONVRT*.8046
     48.          00            YMID=(Y1(IPATH,LINK)+Y2(IPATH,LINK))*CONVRT*.8046
     49.          00      C     SORT THROUGH GRID SQUARES
     50.          00            DO 70 IG=1,NGRID
     51.          00            XGPLUS=XG(IG)*CONVRT*1.6093+0.0001+GSIZE(IG)
     52.          00            YGPLUS=YG(IG)*CONVRT*1.6093+0.0001+GSIZE(IG)
     53.          00            XTEMP1=X1(IPATH,LINK)*CONVRT*1.6093
     54.          00            YTEMP1=Y1(IPATH,LINK)*CONVRT*1.6093
     55.          00            XTEMP2=X2(IPATH,LINK)*CONVRT*1.6093
     56.          00            YTEMP2=Y2(IPATH,LINK)*CONVRT*1.6093
     57.          00            XGTEMP=XG(IG)*CONVRT*1.6093-0.0001
     58.          00            YGTEMP=YG(IG)*CONVRT*1.6093-0.0001
     59.          00            IF(JGRID1(IPATH,LINK).NE.0) GO TO 61
     60.          00            IF(XTEMP1.LT.XGTEMP.OR.XTEMP1.GT.XGPLUS) GO TO 61
     61.          00            IF(YTEMP1.LT.YGTEMP.OR.YTEMP1.GT.YGPLUS) GO TO 61
     62.          00            JGRID1(IPATH,LINK)=IG
     63.          00         61 IF(JGRID2(IPATH,LINK).NE.0) GO TO 62
     64.          00            IF(XTEMP2.LT.XGTEMP.OR.XTEMP2.GT.XGPLUS) GO TO 62
```

```
   197.           00      C
   198.           00      C     MODEL IS IN SHORT-TERM MODE
   199.           00      C
   200.           00       136  READ(IREAD,134) (JCOLDN(L),L=1,5),(JCOLDC(L),L=1,5),(JHOT(L),L=1,5
   201.           00           1)
   202.           00           DO 137 L=1,5
   203.           00           IF(JCOLDN(L).LT.0.OR.JCOLDN(L).GT.100) GO TO 138
   204.           00           IF(JCOLDC(L).LT.0.OR.JCOLDC(L).GT.100) GO TO 138
   205.           00           IF(JHOT(L).LT.0.OR.JHOT(L).GT.100) GO TO 138
   206.           00       137 CONTINUE
   207.           00           GO TO 144
   208.           00       138 WRITE(IWRI,139)
   209.           00       139 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 4P)
   210.           00           ISTOP=1
   211.           00           WRITE(IWRI,1010)
   212.           00      C
   213.           00      C
   214.           00      C     READ AND EDIT CARD TYPE 5P
   215.           00      C
   216.           00      C
   217.           00       140 READ(IREAD,134) (JCLDNP(L),L=1,5),(JCLDCP(L),L=1,5),(JHOTP(L),
   218.           00          1L=1,5)
   219.           00           DO 141 L=1,5
   220.           00           IF(JCLDNP(L).LT.0.OR.JCLDNP(L).GT.100) GO TO 142
   221.           00           IF(JCLDCP(L).LT.0.OR.JCLDCP(L).GT.100) GO TO 142
   222.           00           IF(JHOTP(L).LT.0.OR.JHOTP(L).GT.100) GO TO 142
   223.           00       141 CONTINUE
   224.           00           GO TO 144
   225.           00       142 WRITE(IWRI,143)
   226.           00       143 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 5P)
   227.           00           ISTOP=1
   228.           00           WRITE(IWRI,1010)
   229.           00      C
   230.           00      C
   231.           00      C     READ AND EDIT CARD TYPE 6P
   232.           00      C
   233.           00      C
   234.           00       144 IF(IMFLAG.EQ.0) GO TO 148
   235.           00           READ(IREAD,145) IMYEAR,IMSTRG,IMMECH,IMBEG,IMEND
   236.           00       145 FORMAT(3X,2I2,1X,I1,2I2)
   237.           00           IF(IMYEAR.LT.70.OR.IMYEAR.GT.99) GO TO 146
   238.           00           IF(IMSTRG.LT.10.OR.IMSTRG.GT.50) GO TO 146
   239.           00           IF(IMMECH.NE.0.AND.IMMECH.NE.1) GO TO 146
   240.           00           IF(IMBEG.LT.51.OR.IMBEG.GT.99) GO TO 146
   241.           00           IF(IMEND.LT.52.OR.IMEND.GT.99) GO TO 146
   242.           00           GO TO 148
   243.           00       146 WRITE(IWRI,147)
   244.           00       147 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 6P)
   245.           00           ISTOP=1
   246.           00           WRITE(IWRI,1010)
   247.           00       148 IF(ISTOP.EQ.1) STOP
   248.           00       149 CONTINUE
   249.           00           RETURN
   250.           00           END
END ELT.  ERRORS: NONE. TIME:  0.487 SEC. IMAGE COUNT: 250

@HDG,P  ******  ROAD  ******
```

*** C08 ***

```
      1.            01          SUBROUTINE STATIS
      2.            01     C
      3.            01     C
      4.            01     C    THIS SUBROUTINE COMPUTES THE MODEL OUTPUT STATISTICS FOR THE
      5.            01     C    ANNUAL MODE OF OPERATION
      6.            01     C
      7.            01     C
      8.            01          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
      9.            01          COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     10.            01          COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     11.            01         1JOPT3
     12.            01          COMMON/STRT/EXST(5,3,2)
     13.            01          COMMON/NOPATH/EXNPAM(5,5,3),EXNPPM(5,5,3)
     14.            01          COMMON/NOSTRT/EXNSAM(5,80,3),EXNSPM(5,80,3)
     15.            01          COMMON/OPOUT/COMO1A(10,3,5),COMO1P(10,3,5),CMNO2A(10,3,5),
     16.            01         1CMNO2P(10,3,5),EXP3(10,3,2)
     17.            01          COMMON/NOCOMM/NCOMM(5,2)
     18.            01          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     19.            01          COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     20.            01         1EXPSUM(3,2),AVCONC(5,5,2)
     21.            01          COMMON/PART/EXPP(5,3,2),EXPNP(5,3,2)
     22.            01          DIMENSION GREXP(3),NWS3(10),NWD3(10),NSTAB3(10)
     23.            01     C
     24.            01     C    FIND LARGEST EXPOSURE AND INITIALIZE SOME ARRAYS
     25.            01          DO 10 IP=2,2
     26.            01          DO 7 IC=1,10
     27.            01          DO 5 IAMPM=1,2
     28.            01          COMSUM(IC,IP,IAMPM)=0.
     29.            01        5 CMNSUM(IC,IP,IAMPM)=0.
     30.            01          DO 6 KP=1,5
     31.            01          COMO1A(IC,IP,KP)=0.
     32.            01          COMO1P(IC,IP,KP)=0.
     33.            01          CMNO2A(IC,IP,KP)=0.
     34.            01        6 CMNO2P(IC,IP,KP)=0.
     35.            01        7 CONTINUE
     36.            01          DO 8 IAMPM=1,2
     37.            01        8 EXPSUM(IP,IAMPM)=0.
     38.            01          GREXP(IP)=0.
     39.            01          DO 10 IPATH=1,NPATHS
     40.            01          DO 9 IAMPM=1,2
     41.            01          EXP(IPATH,IP,IAMPM)=0.
     42.            01          EXPP(IPATH,IP,IAMPM)=0.
     43.            01        9 EXPNP(IPATH,IP,IAMPM)=0.
     44.            01          DO 10 ISTWD=1,80
     45.            01          ISTAB=(ISTWD+15)/16
     46.            01     C    NOTE NON-STREET CANYON EXPOSURE ARRAY IS DIMENSIONED FOR CO ONLY
     47.            01          TEXPAM=EXNSAM(IPATH,ISTWD,1)+EXNPAM(IPATH,ISTAB,IP)+EXST(IPATH,IP,
     48.            01         11)/1.5
     49.            01          TEXPPM=EXNSPM(IPATH,ISTWD,1)+EXNPPM(IPATH,ISTAB,IP)+EXST(IPATH,IP,
     50.            01         12)/1.5
     51.            01          IF(TEXPAM.GT.GREXP(IP)) GREXP(IP)=TEXPAM
     52.            01          IF(TEXPPM.GT.GREXP(IP)) GREXP(IP)=TEXPPM
     53.            01       10 CONTINUE
     54.            01     C
     55.            01     C    BASED ON MAX EXPOSURE VALUE, DETERMINE VALUE LIMITS ON EXPOSURE
     56.            01     C    CLASSES
     57.            01          DO 35 IP=2,2
     58.            01          IF(GREXP(IP).LT.1.0) GO TO 30
     59.            01          IF(GREXP(IP).LE.10.0) GO TO 25
     60.            01          DUM=GREXP(IP)
     61.            01          DO 22 II=1,10
     62.            01          DUM=DUM/10.
     63.            01          IF(DUM.GT.10.) GO TO 22
     64.            01          IF(DUM.EQ.10.) GO TO 21
```

```
@ELT,L CEM.TFCALX
ELT 8R1 S7401C 04/23/82 15:45:33 (0)
     1.          00          SUBROUTINE TFCALX                                          00076500
     2.          00     C                                                               00076600
     3.          00          COMMON/MYMCOM/MYM,MYR,TF                                   00076700
     4.          00          REAL TFNORM(6),MYM(20,6),MYR(20,6),TF(20,6)                00076800
     5.          00     C                                                               00076900
     6.          00          DO 850 M = 1,6                                             00077000
     7.          00             TFNORM(M) = 0.0                                         00077100
     8.          00             DO 810 I = 1,20                                         00077200
     9.          00     810        TFNORM(M) = TFNORM(M) + MYM(I,M)*MYR(I,M)           00077300
    10.          00             DO 820 I = 1,20                                         00077400
    11.          00     820        TF(21-I,M) = ( MYM(I,M)*MYR(I,M) )/TFNORM(M)        00077500
    12.          00     C                                                               00077600
    13.          00     850  CONTINUE                                                   00077700
    14.          00     C                                                               00077800
    15.          00          RETURN                                                     00077900
    16.          00     C                                                               00078000
    17.          00     C                                                               00078200
    18.          00          END                                                        00078300

END ELT.  ERRORS: NONE. TIME:  0.211 SEC. IMAGE COUNT: 18

@HDG,P  ******  TRAF  ******
```

```
*** D01 ***                                                                                                    *** D01 ***
    65.          00      500   CONTINUE                                                                    00119600
    66.          00      C*****H:  HUMIDITY CORRECTION FACTOR                                              00119700
    67.          00            DO 675 IMODE=1,3                                                            00119800
    68.          00            H(IMODE) = 1. - .0047*(ABSHUM - 75.)                                        00119900
    69.          00      675   CONTINUE                                                                    00120000
    70.          00      C                                                                                 00120100
    71.          00      C                                                                                 00120200
    72.          00            DO 800 IP=1,3                                                               00120300
    73.          00            DO 800 IMODE=1,3                                                            00120400
    74.          00            DO 800 IY=1,20                                                              00120500
    75.          00            ALHTMP = A(IY,IMODE,IP)*U(IY,IMODE,IP)*L(IMODE,IP)                          00120600
    76.          00            IF(IP.EQ.3) ALHTMP = ALHTMP*H(IMODE)                                        00120700
    77.          00      C     ALHRET(IY,IMODE,IP) = ALHTMP
    78.          00            ALHRET(21-IY,IMODE,IP)=A(IY,IMODE,IP)
    79.          00      800   CONTINUE                                                                    00120900
    80.          00      C                                                                                 00121000
    81.          00            RETURN                                                                      00121100
    82.          00      C     DEBUG SUBCHK                                                                00121200
    83.          00            END                                                                         00121300

END ELT.  ERRORS: NONE. TIME:  0.350 SEC. IMAGE COUNT: 83

@HDG,P  ******  ANNOUT  ******
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```
197.          00          * 0.0 , 0.0 , 0.0 , 0.08, 0.16, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                00157300
198.          00          * 0.58, 0.53, 0.41, 0.41, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                00157400
199.          00          * 3.06, 6.15, 5.34, 5.34, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                00157500
200.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.11, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                00157600
201.          00          * 0.58, 0.53, 0.41, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                00157700
202.          00          * 3.06, 6.15, 5.34, 2.00, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                00157800
203.          00          * 0.0 , 0.0 , 0.11, 0.22, 0.22, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                00157900
204.          00          * 0.58, 0.53, 0.53, 0.53, 1.06, 1.06, 0.0 , 0.0 , 0.0 , 0.0 ,                00158000
205.          00          * 3.06, 6.15, 6.15, 6.15,10.54,10.54, 0.0 , 0.0 , 0.0 , 0.0 ,                00158100
206.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.34, 0.34, 0.0 , 0.0 , 0.0 , 0.0 ,                00158200
207.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00158300
208.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00158400
209.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00158500
210.          00          * 1.17, 1.03, 1.03, 0.23, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00158600
211.          00          * 1.54, 4.00, 4.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00158700
212.          00          * 0.0 , 0.0 , 0.0 , 0.22, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 /               00158800
213.          00      C                                                                                 00158900
214.          00      C***EXHAUST EMISSION FACTOR SLOPE: CALIFORNIA                                     00159000
215.          00           DATA DELCA/                                                                  00159100
216.          00          * 0.58, 0.70, 0.23, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                00159200
217.          00          * 3.06, 6.40, 2.33, 2.33, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                00159300
218.          00          * 0.0 , 0.0 , 0.0 , 0.16, 0.16, 0.22, 0.22, 0.0 , 0.0 , 0.0 ,                00159400
219.          00          * 0.58, 0.53, 0.41, 0.23, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 ,                00159500
220.          00          * 3.06, 6.15, 5.34, 5.34, 2.33, 2.00, 2.00, 0.0 , 0.0 , 0.0 ,                00159600
221.          00          * 0.0 , 0.0 , 0.0 , 0.11, 0.22, 0.22, 0.22, 0.0 , 0.0 , 0.0 ,                00159700
222.          00          * 0.58, 0.53, 0.27, 0.23, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 ,                00159800
223.          00          * 3.06, 6.15, 5.34, 2.00, 2.00, 2.00, 2.00, 0.0 , 0.0 , 0.0 ,                00159900
224.          00          * 0.0 , 0.0 , 0.11, 0.22, 0.22, 0.22, 0.22, 0.0 , 0.0 , 0.0 ,                00160000
225.          00          * 0.58, 0.53, 0.53, 0.53, 0.53, 0.53, 1.06, 0.0 , 0.0 , 0.0 ,                00160100
226.          00          * 3.06, 6.15, 6.15, 6.15, 6.15,10.54,10.54, 0.0 , 0.0 , 0.0 ,                00160200
227.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.34, 0.0 , 0.0 , 0.0 ,                00160300
228.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00160400
229.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00160500
230.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00160600
231.          00          * 0.58, 0.53, 0.53, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23,                00160700
232.          00          * 3.06, 6.15, 6.15, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00,                00160800
233.          00          * 0.0 , 0.0 , 0.0 , 0.22, 0.22, 0.22, 0.22, 0.22, 0.22, 0.22 /              00160900
234.          00      C                                                                                 00161000
235.          00      C***EXHAUST EMISSION FACTOR SLOPE: HIGH ALTITUDE                                  00161100
236.          00           DATA DELHI/                                                                  00161200
237.          00          * 0.55, 0.55, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23,                00161300
238.          00          * 2.81, 4.24, 2.80, 2.80, 2.80, 2.30, 2.00, 2.00, 2.00, 2.00,                00161400
239.          00          * 0.0 , 0.0 , 0.0 , 0.08, 0.16, 0.16, 0.16, 0.22, 0.22, 0.22,                00161500
240.          00          * 0.55, 0.55, 0.41, 0.41, 0.41, 0.41, 0.23, 0.23, 0.0 , 0.0 ,                00161600
241.          00          * 2.81, 4.24, 5.34, 5.34, 5.34, 5.34, 2.00, 2.00, 0.0 , 0.0 ,                00161700
242.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.11, 0.11, 0.22, 0.0 ,                00161800
243.          00          * 0.55, 0.55, 0.41, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00161900
244.          00          * 2.81, 4.24, 5.34, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00162000
245.          00          * 0.0 , 0.0 , 0.11, 0.11, 0.22, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00162100
246.          00          * 0.55, 0.55, 0.55, 0.55, 1.06, 1.06, 0.0 , 0.0 , 0.0 , 0.0 ,                00162200
247.          00          * 2.81, 4.24, 4.24, 4.24,10.54,10.54, 0.0 , 0.0 , 0.0 , 0.0 ,                00162300
248.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.34, 0.0 , 0.0 , 0.0 , 0.0 ,                00162400
249.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00162500
250.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00162600
251.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00162700
252.          00          * 0.55, 0.55, 0.55, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23,                00162800
253.          00          * 2.81, 4.24, 4.24, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00,                00162900
254.          00          * 0.0 , 0.0 , 0.0 , 0.22, 0.22, 0.22, 0.22, 0.22, 0.22, 0.22 /              00163000
255.          00      C                                                                                 00163100
256.          00      C                                                                                 00164000
257.          00      C***IDLE EMISSION FACTOR INTERCEPT: 49 STATE                                      00164100
258.          00           DATA IDLB49/                                                                 00164200
259.          00          * 2.01, 0.66, 0.27, 0.03, 0.07, 0.07, 0.0 , 0.0 , 0.0 , 0.0 ,                00164300
260.          00          * 16.42, 12.73, 3.43, 0.88, 0.22, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,              00164400
261.          00          * 0.16, 0.26, 0.16, 0.36, 0.22, 0.04, 0.2 , 0.0 , 0.0 , 0.0 ,                00164500
262.          00          * 2.01, 0.68, 0.28, 0.24, 0.08, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                00164600
```

*** D02 ***

```
     65.          00     C
     66.          00     C      SEGMENT IS A STREET CANYON
     67.          00      20    CALL STREET(IPATH,LINK,TT)
     68.          00      50    CONTINUE
     69.          00            GO TO 100
     70.          00     C
     71.          00     C      MODEL IS IN SHORT-TERM MODE
     72.          00      60    DO 80 IPATH=1,NPATHS
     73.          00            NSEGS=NSEG(IPATH)
     74.          00            DO 80 LINK=1,NSEGS
     75.          00            IF(IBOUND.EQ.2) TT1(IPATH,LINK,1)=TT1(IPATH,LINK,2)
     76.          00            IF(IBOUND.EQ.2) TT2(IPATH,LINK,1)=TT2(IPATH,LINK,2)
     77.          00            TT(1)=(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1))*60.
     78.          00            TOTTT(IPATH,1)=TOTTT(IPATH,1)+TT(1)
     79.          00     C
     80.          00     C      DETERMINE IF SEGMENT IS A STREET CANYON OR NOT AND CALL APPRO-
     81.          00     C      PRIATE DISPERSION ROUTINE
     82.          00            IF(LINTOP(IPATH,LINK).EQ.2) GO TO 70
     83.          00     C
     84.          00     C      SEGMENT IS NOT A STREET CANYON--COMPUTE AND SUM EXPOSURES
     85.          00     C
     86.          00     C      SEE COMMENT FOLLOWING CALL OF ROAD IN ANNUAL MODE COMPUTATIONS
     87.          00            CALL ROAD(1,1,ISTAB,ISTAB,1,IPATH,LINK,C)
     88.          00     C      UNITS OF EXPOSURE EXNSAM ARE G-SEC/M**3
     89.          00            EXNSAM(IPATH,1,1)=EXNSAM(IPATH,1,1)+C(1,1,1)*TT(1)/WS
     90.          00            GO TO 80
     91.          00     C
     92.          00     C      SEGMENT IS A STREET CANYOH
     93.          00      70    CALL STREET(IPATH,LINK,TT)
     94.          00      80    CONTINUE
     95.          00     C
     96.          00     C      COMPUTE DISPERSION OF NON-PATHWAY SOURCE EMISSIONS
     97.          00     C
     98.          00      100   CALL NPATHD
     99.          00            RETURN
    100.          00            END

END ELT.  ERRORS: NONE. TIME:  0.303 SEC. IMAGE COUNT: 100

@HDG,P  ******  EFALTX  ******
```

```
      1.            00          SUBROUTINE INDATA
      2.            00    C
      3.            00    C
      4.            00    C     THIS SUBROUTINE READS AND EDITS THE INPUT DATA NEEDED BY THE MAIN
      5.            00    C     MODEL
      6.            00    C
      7.            00    C
      8.            00          COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
      9.            00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     10.            00          COMMON/IO/IREAD,IWRI,IFILE
     11.            02          COMMON/GENRL/AMHEAD(10),IDATE(3),CONVRT
     12.            00          COMMON/RUNTYP/MODRUN
     13.            00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     14.            00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     15.            00          COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     16.            00          COMMON/PAEMIS/ERATEA(5,20,3),ERATEP(5,20,3),W(5,20)
     17.            00          COMMON/GRID/XG(500),YG(500),GVMT(500),IGLOC(500),GEMIS(500),
     18.            00         1GSIZE(500)
     19.            00          COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     20.            00          COMMON/METST/WS,IWD,ISTAB
     21.            00          COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     22.            00         1JOPT3
     23.            00          COMMON/EMSFAC/OUTFAC(2,11,3),GRDFAC(2,5,3),EMCR1(2,3,6),
     24.            00         1EMAD1(2,3,6),EMIDLE(3)
     25.            00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
     26.            00         1QDIST(5,20,2),CYCL(5,20,2),EL(5,20,2),P(5,20,2)
     27.            00          COMMON/TRAFOT/VOLHR(5,20,4),LINSPD(5,20,4)
     28.            00          COMMON/SPREAD/DIURN(3,12),SEASON(3,12)
     29.            00          COMMON/TOLL/TOLLS(5,20)
     30.            00          COMMON/BAKUP/VOLBAK(5,20,2),CAPBAK(5,20,2),
     31.            00         1BAKTIM(5,20,2)
     32.            00          COMMON/SIGNAL/R(4),GPH(5,20,4),
     33.            00         1ACAP(5,20,4),ADV(5,20,4)
     34.            00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     35.            00          COMMON/NOCOMM/NCOMM(5,2)
     36.            00          DIMENSION AMPM(2),NAME(5,20)
     37.            00          DATA IREAD,IWRI,IFILE/5,6,8/,AMPM/2HAM,2HPM/
     38.            00          ISTOP=0
     39.            00    C
     40.            00    C
     41.            00    C     READ AND EDIT CARD TYPE 1
     42.            00    C
     43.            00    C
     44.            04          READ(IREAD,100) (AMHEAD(I),I=1,10),(IDATE(I),I=1,3),MODRUN,
     45.            00         1LPATH,LNPATH,NPRINT
     46.            04    CR NPOP DELETED BEFORE MODRUN
     47.            04     100  FORMAT(3X,10A2,3I2,4(1X,I1))
     48.            00          IF(IDATE(1).LT.77.OR.IDATE(1).GT.95) GO TO 108
     49.            00          IF(MODRUN.NE.1.AND.MODRUN.NE.2) GO TO 108
     50.            00          IF(LPATH.NE.1.AND.LPATH.NE.2) GO TO 108
     51.            00          IF(LNPATH.NE.1.AND.LNPATH.NE.2) GO TO 108
     52.            00          IF(NPRINT.NE.1.AND.NPRINT.NE.2) GO TO 108
     53.            00          GO TO 110
     54.            00     108  WRITE(IWRI,109)
     55.            00     109  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 1M)
     56.            00          ISTOP=1
     57.            00          WRITE(IWRI,107)
     58.            00     107  FORMAT(5X,47HPROCESSING WILL CONTINUE THROUGH LAST CARD TYPE)
     59.            00    C
     60.            00    C
     61.            00    C     READ AND EDIT CARD TYPE 2
     62.            00    C
     63.            00    C
     64.            00     110  READ(IREAD,111) NPATHS,(NSEG(I),I=1,5),NGRID,CONVRT
```

*** D05 ***

```
00            IF(DEL.GT.0.AND.ISTRIN.EQ.5)PCRED=PCIM(DEL,ISTRIN,ITECH+(IPROGM-
00           *1)*4+(IPOL-1)*8)*0.01
00
00      C*PERHAPS SKIP FOR LDT?                                                00118400
00            PCLEFT = 1. - PCRED                                              00118500
00      C                                                                      00118600
00            BEF(I,CYP,IPOL+(IMODE-1)*3)=BEF(I,CYP,IPOL+(IMODE-1)*3)*PCLEFT
00      80    CONTINUE
00      90    CONTINUE                                                         00118900
00      C                                                                      00119000
00      100   CONTINUE                                                         00119100
00      C                                                                      00119200
00            RETURN                                                           00119300
00      C                                                                      00119400
00      C     DEBUG SUBCHK                                                     00119500
00      C                                                                      00119600
00            END                                                              00119700
```

END ELT. ERRORS: NONE. TIME: 0.345 SEC. IMAGE COUNT: 81

@HDG,P ****** MAPCEMAP ******

```
      00            IF(YTEMP2.LT.YGTEMP.OR.YTEMP2.GT.YGPLUS) GO TO 62
      00            JGRID2(IPATH,LINK)=IG
      00       62   IF(JGRIDM(IPATH,LINK).NE.0) GO TO 63
      00            IF(XMID.LT.XGTEMP.OR.XMID.GT.XGPLUS) GO TO 70
      00            IF(YMID.LT.YGTEMP.OR.YMID.GT.YGPLUS) GO TO 70
      00            JGRIDM(IPATH,LINK)=IG
      00       63   IF(JGRID1(IPATH,LINK).NE.0.AND.JGRID2(IPATH,LINK).NE.0) GO TO 80
      00       70   CONTINUE
      00            WRITE(IWRI,72) LINK,IPATH
      00       72   FORMAT(2X,35HA GRID SQUARE THROUGH WHICH SEGMENT,I4,11H OF PATHWAY
      00           1,I4,18H PASSES IS MISSING)
      00            STOP
      00       80   CONTINUE
      00      100   CONTINUE
      00      C
      00      C
      00      C     COMPUTE NORMALIZED EXPOSURES FROM NON-PATHWAY SOURCES
      00      C
      00      C
      00            IF(MODRUN.EQ.2) GO TO 120
      00      C
      00      C     ANNUAL MODE
      00      C
      00            DO 112 IPATH=1,NPATHS
      00            NSEGS=NSEG(IPATH)
      00            DO 111 LINK=1,NSEGS
      00            IDUM1=JGRID1(IPATH,LINK)
      00            IDUM2=JGRID2(IPATH,LINK)
      00            IDUMM=JGRIDM(IPATH,LINK)
      00            DO 111 IS=1,5
      00            DO 110 IP=2,2
      00      C     COMPUTE AM AND PM NORMALIZED CONCENTRATIONS AT END POINTS AND
      00      C     MIDPOINT OF SEGMENT
      00            CHI1A=CONST(IS)*EGRID(IDUM1,IP,1)
      00            CHI2A=CONST(IS)*EGRID(IDUM2,IP,1)
      00            CHIMA=CONST(IS)*EGRID(IDUMM,IP,1)
      00            CHI1P=CONST(IS)*EGRID(IDUM1,IP,2)
      00            CHI2P=CONST(IS)*EGRID(IDUM2,IP,2)
      00            CHIMP=CONST(IS)*EGRID(IDUMM,IP,2)
      00      C     COMPUTE AM AND PM NORMALIZED EXPOSURES ON SEGMENT AND ADD TO
      00      C     PATHWAY SUM
      00      C     UNITS OF EXPOSURE EXNPAM ARE G/M**2
      00            EXNPAM(IPATH,IS,IP)=EXNPAM(IPATH,IS,IP)+0.5*(CHI1A*TT1(IPATH,LINK,
      00           1)+CHIMA*(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1))+CHI2A*TT2(IPATH,
      00           2LINK,1))*60.
      00       110  EXNPPM(IPATH,IS,IP)=EXNPPM(IPATH,IS,IP)+0.5*(CHI1P*TT1(IPATH,LINK,
      00           1)+CHIMP*(TT1(IPATH,LINK,2)+TT2(IPATH,LINK,2))+CHI2P*TT2(IPATH,
      00           2LINK,2))*60.
      00       111  CONTINUE
      00       112  CONTINUE
      00            GO TO 150
      00      C
      00      C     SHORT-TERM MODE
      00      C
      00       120  DO 145 IPATH=1,NPATHS
      00            NSEGS=NSEG(IPATH)
      00            DO 140 LINK=1,NSEGS
      00            IDUM1=JGRID1(IPATH,LINK)
      00            IDUM2=JGRID2(IPATH,LINK)
      00            IDUMM=JGRIDM(IPATH,LINK)
      00            DO 130 IP=2,2
      00      C      COMPUTE CONCENTRATION AT END POINTS AND MIDPOINT OF SEGMENT
      00            CHI1=CONST(ISTAB)*EGRID(IDUM1,IP,1)/WS
      00            CHI2=CONST(ISTAB)*EGRID(IDUM2,IP,1)/WS
      00            CHIM=CONST(ISTAB)*EGRID(IDUMM,IP,1)/WS
      00      C     COMPUTE EXPOSURE ON SEGMENT AND ADD TO PATHWAY SUM
```

*** D06 ***

*** D07 ***

```
@ELT,L CEM.ROAD
ELT 8R1 S7491C 04/23/82 15:45:20 (0)
      1.          00            SUBROUTINE ROAD (KTIME,KWD,KSTAB1,KSTAB2,JWS,IPATH,LINK,C)
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE USES THE CALINE3 METHODOLOGY TO COMPUTE SEMI-
      5.          00      C     NORMALIZED CONCENTRATIONS ON PATHWAY SEGMENTS THAT ARE NOT STREET
      6.          00      C     CANYONS
      7.          00      C
      8.          00      C
      9.          00            COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     10.          00           1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     11.          00            COMMON/GENR1/MHEAD(10),IDATE(3),CONVRT
     12.          00            COMMON/IO/IREAD,IWRI,IFILE
     13.          00            COMMON/PAEMIS/ERATEA(5,20,3),ERATEP(5,20,3),W(5,20)
     14.          00            COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     15.          00            COMMON/RUNTYP/MODRUN
     16.          00            COMMON/METST/WS,IWD,ISTAB
     17.          00            COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     18.          00            REAL LB,NE,INC,LIM,LL,INT6(6)
     19.          00            DIMENSION Y(6),                WDIR(16),QE(2,3),FAC2(2,3),CON(2,3),
     20.          00           1C(2,80,3),AZ(5),AY1(5),AY2(5),WT(5)
     21.          00            DATA WDIR/22.5,45.,67.5,90.,112.5,135.,157.5,180.,202.5,225.,
     22.          00           1247.5,270.,292.5,315.,337.5,0./
     23.          00            DATA AZ/1112.,556.,353.,219.,124./
     24.          00            DATA AY1/0.46,0.29,0.18,0.11,0.087/
     25.          00            DATA AY2/1831.,1155.,717.,438.,346./
     26.          00            DATA WT/0.25,0.75,1.0,0.75,0.25/
     27.          00            DREF=ALOG(10000.)
     28.          00            PI=3.1415926
     29.          00            RAD=PI/180.
     30.          00            DEG=180./PI
     31.          00            IF(LINTYP(IPATH,LINK).EQ.2) Z0=321.
     32.          00            IF(LINTYP(IPATH,LINK).NE.2) Z0=195.
     33.          00            WL=W(IPATH,LINK)*6.
     34.          00            W2=WL/2.
     35.          00            XD=(X2(IPATH,LINK)-X1(IPATH,LINK))*1609.3*CONVRT
     36.          00            YD=(Y2(IPATH,LINK)-Y1(IPATH,LINK))*1609.3*CONVRT
     37.          00      C     THIS IS LINK LENGTH
     38.          00            LL=SQRT(XD**2+YD**2)
     39.          00            IF(LL.GT.WL) GO TO 10
     40.          00            WRITE(IWRI,6)
     41.          00             6    FORMAT(1H1,1X,49HSEGMENT LENGTH MUST EQUAL OR EXCEED SEGMENT WIDTH
     42.          00           1)
     43.          00            STOP
     44.          00      C     THIS IS LINK BEARING
     45.          00             10   ARG=ABS(XD)/LL
     46.          00            LB=DEG*(ACOS(ARG))
     47.          00            IF(XD.GT.0.0.AND.YD.GE.0.) LB=90.-LB
     48.          00            IF(XD.GE.0.0.AND.YD.LT.0.) LB=90.+LB
     49.          00            IF(XD.LT.0.0.AND.YD.LE.0.) LB=270.-LB
     50.          00            IF(XD.LE.0.0.AND.YD.GT.0.) LB=270.+LB
     51.          00      C
     52.          00      C     THESE ARE UPWIND AND DOWNWIND LENGTHS
     53.          00            UWL=LL/2.
     54.          00            DWL=-LL/2.
     55.          00      C     DETERMINES DIRECTION ALONG LINK (+ IS UPWIND   - IS DOWNWIND)
     56.          00            SGN=1.
     57.          00      C     ELEMENT NO., STEP FACTOR AND LOOP END INITIALIZATION
     58.          00            NE=0.
     59.          00            STP=1.
     60.          00            FINI=1.
     61.          00            IF(SGN.EQ.1.0.AND.UWL.LE.0.0.AND.DWL.LT.0.) SGN=-1.
     62.          00      C
     63.          00      C
     64.          00      C     BEGIN WIND DIRECTION LOOP
```

```
                IDUM=DUM+1.
                EINTVL(IP)=IDUM*10.**(II-1)
                GO TO 35
          21    EINTVL(IP)=10.
                GO TO 35
          22    CONTINUE
          25    IF(GREXP(IP).EQ.1.0) GO TO 26
                IF(GREXP(IP).EQ.10.0) GO TO 27
                IDUM=GREXP(IP)+1.
                EINTVL(IP)=IDUM/10.
                GO TO 35
          26    EINTVL(IP)=0.1
                GO TO 35
          27    EINTVL(IP)=1.0
                GO TO 35
          30    DUM=GREXP(IP)
                DO 34 II=1,10
                DUM=DUM*10.
                IF(DUM.LT.1.0) GO TO 34
                IDUM=DUM+1.
                EINTVL(IP)=IDUM/10.**(II+1)
                GO TO 35
          34    CONTINUE
          35    CONTINUE
          C
          C     COMBINE DAY AND NIGHT NEUTRAL STABILITIES (TO FORM 5 CLASSES) IN
          C     MET FREQUENCY DISTRIBUTIONS
                DO 50 JWD=1,16
                DO 50 JWS=1,6
                FREQA(4,JWD,JWS)=FREQA(4,JWD,JWS)+FREQA(5,JWD,JWS)
                FREQA(5,JWD,JWS)=FREQA(6,JWD,JWS)
                FREQP(4,JWD,JWS)=FREQP(4,JWD,JWS)+FREQP(5,JWD,JWS)
                FREQP(5,JWD,JWS)=FREQP(6,JWD,JWS)
          50    CONTINUE
          C
          C     CALCULATE EXPOSURES FOR ALL CASES AND WEIGHT ACCORDING TO FREQUEN-
          C     CY DISTRIBUTIONS
          C
                DO 135 IPATH=1,NPATHS
                IF(IPATH.NE.NOPT3) GO TO 51
          C
          C     DECODE MET CONDITIONS FLAGGED FOR OPTIONAL OUTPUT 3
                DO 60 IOPT3=1,JOPT3
                IF(NMET(IOPT3).EQ.0) GO TO 60
                NWS3(IOPT3)=MOD(NMET(IOPT3),6)
                IF(NWS3(IOPT3).EQ.0) NWS3(IOPT3)=6
                MM=MOD(NMET(IOPT3),96)
                IF(MM.EQ.0) MM=96
                NWD3(IOPT3)=(MM+5)/6
                NSTAB3(IOPT3)=(NMET(IOPT3)+95)/96
                IF(NSTAB3(IOPT3).GE.5) NSTAB3(IOPT3)=NSTAB3(IOPT3)-1
          60    CONTINUE
          51    DO 130 IP=2,2
                DO 110 ISTWD=1,80
                ISTAB=(ISTWD+15)/16
                IWDIR=MOD(ISTWD,16)
                IF(IWDIR.EQ.0) IWDIR=16
                DO 106 IWSPD=1,6
                IF(FREQA(ISTAB,IWDIR,IWSPD).NE.0.0) GO TO 55
                IF(FREQP(ISTAB,IWDIR,IWSPD).EQ.0.0) GO TO 102
          C
          C     SUM STREET CANYON, NON-STREET CANYON, AND NON-PATHWAY SOURCE
          C     EXPOSURES.  NON-STREET CANYON EXPOSURE ARRAYS MUST BE MODIFIED FOR
          C     MORE THAN ONE POLLUTANT.  SEE COMMENTS IN ROAD AND DISPRS.
          C
          55    IW=IWSPD
```

```
*** D09 ***                                                                                                    *** D09 ***
@ELT,L CEM.TRAF
ELT 8R1 S74Q1C 04/23/82 15:45:34 (1)
     1.          00          SUBROUTINE TRAF
     2.          00     C    THIS IS THE MAIN CONTROL SUBROUTINE FOR THE TRAFFIC MODULE.
     3.          00     C
     4.          00          COMMON/RUNTYP/MODRUN
     5.          00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
     6.          00         1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
     7.          00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     8.          00          COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
     9.          00          COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
    10.          00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
    11.          00          COMMON/TRAFOT/ VOLHR(5,20,2),LINSPD(5,20,4)
    12.          00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
    13.          00          COMMON/SPREAD/ DIURN(3,2,2),SEASON(3,12)
    14.          00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
    15.          00          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
    16.          00          COMMON/SECOND/IAMPC,IPMPC,IPCWA,RATSEC(5)
    17.          00          COMMON/TOLL/TOLLS(5,20,2)
    18.          00          COMMON/BAKUP/VOLBAK(5,20,2),CAPBAK(5,20,2),
    19.          00         1BAKTIM(5,20,2)
    20.          00          COMMON/SIGNAL/R(4),GPH(5,20,4),
    21.          00         1ACAP(5,20,4),ADV(5,20,4)
    22.          00          KTRIP=4
    23.          01          IF(MODRUN.EQ.2) KTRIP=2
    24.          00     C
    25.          00     C
    26.          00     C
    27.          00     C
    28.          00     C
    29.          00          DO 1000 NPATH=1,NPATHS
    30.          00          NLINK=NSEG(NPATH)
    31.          00          DO 990 NSEGS=1,NLINK
    32.          00          DO 900 M=1,KTRIP
    33.          00          M9=M
    34.          00          IF(M9.GT.2) M9=M9-2
    35.          00          K9=0
    36.          01          GO TO (100,200),MODRUN
    37.          00        100 IF(M.EQ.1.OR.M.EQ.4) K9=1
    38.          00          GO TO 5
    39.          00        200 IF(IBOUND.EQ.M) K9=1
    40.          00          5 N=NPATH
    41.          00          L=NSEGS
    42.          00          IF(LINTYP(N,L)-2) 10,20,30
    43.          00         10 CALL FREE(N,L,M,K9,M9)
    44.          00          GO TO 900
    45.          00         20 CALL ART(N,L,M,K9,M9)
    46.          00          GO TO 900
    47.          00         30 CALL MODE(N,L,M,K9,M9)
    48.          00        900 CONTINUE
    49.          00        990 CONTINUE
    50.          00       1000 CONTINUE
    51.          00          RETURN
    52.          00          END

END ELT.  ERRORS: NONE. TIME:  0.272 SEC. IMAGE COUNT: 52

@HDG,P ******  TRKOPC  ******
```

*** E01 ***

```
      1.          00          SUBROUTINE ANNOUT
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE PRINTS THE MODEL OUTPUT STATISTICS FOR THE ANNUAL
      5.          00      C     MODE OF OPERATION
      6.          00      C
      7.          00      C
      8.          00          COMMON/IO/IREAD,IWRI,IFILE
      9.          00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     10.          00          COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     11.          00         1JOPT3
     12.          00          COMMON/OPOUT/COM01A(10,3,5),COM01P(10,3,5),CMN02A(10,3,5),
     13.          00         1CMN02P(10,3,5),EXP3(10,3,2)
     14.          00          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     15.          00          COMMON/SAVE/EXP(5,4,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     16.          00         1EXPSUM(3,2),AVCONC(3,5,2)
     17.          00          COMMON/PART/EXPP(5,3,2),EXPNP(5,3,2)
     18.          00      C
     19.          00      C     PRINT HEADING
     20.          00          WRITE(IWRI,1)
     21.          00       1  FORMAT(1H1,27X,43HANNUAL AVERAGE COMMUTER EXPOSURE STATISTICS,////
     22.          00         1//)
     23.          00      C
     24.          00      C     PRINT PATHWAY EXPOSURE LIST HEADING
     25.          00          WRITE(IWRI,2)
     26.          00       2  FORMAT(1HX,13HEXPOSURE FROM, 12X,13HEXPOSURE FROM,/,15X,
     27.          00         115HPATHWAY SOURCES,8X,19HNON-PATHWAY SOURCES,9X,
     28.          00         214HTOTAL EXPOSURE,31X,13HCONCENTRATION,/,15X,
     29.          00         316H(GRAM SEC/CU. M),9X,16H(GRAM SEC/CU. M),9X,
     30.          00         416H(GRAM SEC/CU. M),6X,17HTRAVEL TIME (SEC),7X,
     31.          00         513H(GRAMS/CU. M),/,2X,7HPATHWAY,3X,10HAM AVERAGE,
     32.          00         62X,10HPM AVERAGE,3X,10HAM AVERAGE,2X,10HPM AVERAGE,
     33.          00         73X,10HAM AVERAGE,2X,10HPM AVERAGE,6X,2HAM,8X,2HPM,
     34.          00         85X,10HAM AVERAGE,2X,10HPM AVERAGE,/)
     35.          00          DO 100 IP=2,2
     36.          00          DO 10 IPATH=1,NPATHS
     37.          00       10 WRITE(IWRI,11) IPATH,(EXPP(IPATH,IP,IAMPM),IAMPM=1,2),
     38.          00         1(EXPNP(IPATH,IP,IAMPM),IAMPM=1,2),(EXP(IPATH,IP,IAMPM),
     39.          00         2IAMPM=1,2),(TOTTT(IPATH,
     40.          00         3IAMPM),IAMPM=1,2),(AVCONC(IP,IPATH,IAMPM),IAMPM=1,2)
     41.          00       11 FORMAT(5X,I2,3X,2(2X,E10.3),1X,2(2X,E10.3),1X,2(2X,E10.3),
     42.          00         12(3X,F7.0),1X,2(2X,E10.3))
     43.          00      C
     44.          00      C     PRINT ANNUAL AVERAGE AM AND PM EXPOSURES OVER ALL PATHWAYS
     45.          00          WRITE(IWRI,15) (EXPSUM(IP,IAMPM),IAMPM=1,2)
     46.          00       15 FORMAT(//////,2X,57HANNUAL AVERAGE EXPOSURE FOR ALL PATHWAYS (GRAM
     47.          00         1 SEC/CU. M),/,2X,2HAM,5X,E10.3,/,2X,2HPM,5X,E10.3)
     48.          00      C
     49.          00      C     PRINT HISTOGRAM DATA HEADING AND DATA
     50.          00          WRITE(IWRI,20)
     51.          00       20 FORMAT(//////,36X,12HALL PATHWAYS)
     52.          00          WRITE(IWRI,21)
     53.          00       21 FORMAT(//,38X,17HPERCENT COMMUTERS,5X,27HPROBABILITY OF EXPERIENCI
     54.          00         1NG,/,17X,12HCLASS LIMITS, 14X,8HIN CLASS, 15X,14HEXPOSURE CLASS,
     55.          00         2/,2X,5HCLASS,8X,16H(GRAM SEC/CU. M),10X,2HAM,7X,2HPM,15X,2HAM,
     56.          00         310X,2HPM,/)
     57.          00          DO 25 IC=1,10
     58.          00          V1=(IC-1)*EINTVL(IP)
     59.          00          V2=V1+EINTVL(IP)
     60.          00          WRITE(IWRI,26) IC,V1,V2,(COMSUM(IC,IP,IAMPM),IAMPM=1,2),
     61.          00         1(CMNSUM(IC,IP,IAMPM),IAMPM=1,2)
     62.          00       26 FORMAT(3X,I2,6X,2(1X,E10.3),2X,2(5X,F4.0),5X,2(7X,F5.3))
     63.          00      C
     64.          00      C     PRINT OPTIONAL OUTPUT 1, IF CALLED FOR
```

```
      00          * 16.42, 12.73,  2.02,  1.82,  0.49,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00164700
      00          * 0.16,  0.26,  0.16,  0.25,  0.18,  0.04, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00164800
      00          * 2.93,  1.86,  0.24,  0.08,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00164900
      00          * 17.24, 18.62,  1.82,  0.49,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165000
      00          * 0.18,  0.27,  0.18,  0.04,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165100
      00          * 3.85,  0.71,  3.09,  0.73,  0.20,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165200
      00          * 24.63, 15.70, 21.92, 19.23,  1.54,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165300
      00          * 0.02,  0.04,  0.02,  0.02,  0.01,  0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165400
      00          * 0.50,  0.40,  0.40,  0.25,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165500
      00          * 1.32,  0.66,  0.66,  0.66,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165600
      00          * 1.11,  1.00,  0.99,  0.27,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165700
      00          * 4.05,  2.12,  1.72,  0.13,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165800
      00          * 8.27,  4.87,  3.57,  0.65,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00165900
      00          * 0.01,  0.02,  0.04,  0.01,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00166000
      00  C                                                                                    00166100
      00  C***IDLE EMISSION FACTOR INTERCEPT: CALIFORNIA                                      00166200
      00        DATA IDLBCA/                                                                  00166300
      00          * 2.01,  0.93,  0.04,  0.02,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00166400
      00          * 16.42, 15.02,  0.18,  0.18,  0.1 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00166500
      00          * 0.16,  0.24,  0.07,  0.11,  0.08,  0.02, 0.02, 0.0 , 0.0 , 0.0 , 0.0 ,  00166600
      00          * 2.01,  0.68,  0.28,  0.07,  0.04,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00166700
      00          * 16.42, 12.73,  2.02,  1.72,  0.48,  0.48, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00166800
      00          * 0.18,  0.26,  0.19,  0.25,  0.21,  0.09, 0.04, 0.0 , 0.0 , 0.0 , 0.0 ,  00166900
      00          * 2.93,  1.86,  0.10,  0.04,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167000
      00          * 17.24, 18.62,  1.72,  0.48,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167100
      00          * 0.18,  0.29,  0.25,  0.09,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167200
      00          * 3.85,  0.71,  3.09,  0.18,  0.05,  0.03, 0.01, 0.0 , 0.0 , 0.0 , 0.0 ,  00167300
      00          * 24.63, 15.70, 21.92,  4.40,  4.04,  0.32, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167400
      00          * 0.02,  0.04,  0.02,  0.05,  0.05,  0.04, 0.03, 0.0 , 0.0 , 0.0 , 0.0 ,  00167500
      00          * 0.50,  0.40,  0.40,  0.25,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167600
      00          * 1.32,  0.66,  0.66,  0.66,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167700
      00          * 1.11,  1.00,  0.93,  0.81,  0.27,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167800
      00          * 3.46,  1.81,  1.48,  0.32,  0.11,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00167900
      00          * 11.57,  6.82,  5.00,  0.91,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00168000
      00          * 0.01,  0.02,  0.04,  0.01,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  00168100
      00  C                                                                                    00168200
      00  C***IDLE EMISSION FACTOR INTERCEPT: HIGH ALTITUDE                                   00168300
      00        DATA IDLBHI/                                                                  00168400
      00          * 2.29,  1.04,  0.24,  0.17,  0.24,  0.05, 0.05, 0.03, 0.0 , 0.0 ,        00168500
      00          * 20.70, 20.71,  4.48,  3.01,  4.48,  1.81, 0.84, 0.41, 0.0 , 0.0 ,       00168600
      00          * 0.26,  0.19,  0.08,  0.06,  0.28,  0.06, 0.14, 0.02, 0.04, 0.0 ,       00168700
      00          * 2.29,  1.04,  0.22,  0.05,  0.22,  0.32, 0.12, 0.08, 0.0 , 0.0 ,       00168800
      00          * 20.70, 20.71,  5.60,  2.02,  2.60,  2.32, 1.01, 0.49, 0.0 , 0.0 ,      00168900
      00          * 0.26,  0.19,  0.08,  0.04,  0.25,  0.04, 0.11, 0.18, 0.04, 0.0 ,       00169000
      00          * 3.40,  3.50,  0.39,  0.12,  0.08,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00169100
      00          * 38.84, 48.25,  3.75,  1.01,  0.49,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,      00169200
      00          * 0.10,  0.17,  0.11,  0.18,  0.04,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00169300
      00          * 4.46,  1.34,  5.82,  1.22,  0.32,  0.20, 0.0 , 0.0 , 0.0 , 0.0 ,       00169400
      00          * 55.59, 40.68, 56.80, 31.15,  3.17,  1.54, 0.0 , 0.0 , 0.0 , 0.0 ,      00169500
      00          * 0.01,  0.03,  0.02,  0.01,  0.01,  0.01, 0.0 , 0.0 , 0.0 , 0.0 ,       00169600
      00          * 0.58,  0.75,  0.75,  0.34,  0.25,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00169700
      00          * 2.97,  1.71,  1.71,  1.71,  0.66,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00169800
      00          * 0.64,  0.64,  0.64,  0.27,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00169900
      00          * 4.01,  3.59,  2.87,  0.20,  0.13,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00170000
      00          * 26.07,  6.68,  4.90,  1.34,  0.65,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,      00170100
      00          * 0.01,  0.01,  0.03,  0.01,  0.04,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,       00170200
      00  C                                                                                    00170300
      00  C***IDLE EMISSION FACTOR SLOPE: 49 STATE                                          00170400
      00        DATA IDEL49/                                                                  00170500
      00          * 0.18, 0.20, 0.07, 0.07, 0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,           00170600
      00          * 2.55, 2.92, 0.83, 0.67, 0.59,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,           00170700
      00          * 0.0 , 0.0 , 0.0 , 0.03, 0.06,  0.08, 0.0 , 0.0 , 0.0 , 0.0 ,           00170800
      00          * 0.18, 0.20, 0.19, 0.19, 0.06,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,           00170900
      00          * 2.55, 2.92, 1.56, 1.56, 0.25,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,           00171000
      00          * 0.0 , 0.0 , 0.0 , 0.02, 0.01,  0.02, 0.0 , 0.0 , 0.0 , 0.0 ,           00171100
      00          * 0.18, 0.20, 0.19, 0.06, 0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,           00171200
```

*** E02 ***

```
*** E03 ***                                                                    *** E03 ***
@ELT,L CEM.EFALTX
ELT $R1 S7401C 04/23/82 15:44:52 (0)
      1.          00            SUBROUTINE EFALTX
      2.          00      C
      3.          00            COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC
      4.          00            COMMON/INDXCM/INDX3R(30,3,18)
      5.          00            COMMON/BASECM/BASE3R(10,3,18)
      6.          00            COMMON/DELCOM/DEL3R(10,3,18)
      7.          00      C
      8.          00            INTEGER MAXIND(3,6,3)
      9.          00      C
     10.          00            DO 10 IR=1,3
     11.          00            DO 10 IM=1,6
     12.          00            DO 10 IP=1,3
     13.          00      10    MAXIND(IP,IM,IR)=INDX3R(30,IP,IM+(IR-1)*6)
     14.          00      C
     15.          00            DO 20 IMOD=1,100
     16.          00      20    MODFLG(IMOD)=0
     17.          00      C
     18.          00            DO 100 IFAC=1,NEWFAC
     19.          00            IREG=INTALT(1,IFAC)
     20.          00            IMOD=INTALT(2,IFAC)
     21.          00            IPOL=INTALT(3,IFAC)
     22.          00            MYFRST=INTALT(4,IFAC)
     23.          00            MYLAST=INTALT(5,IFAC)
     24.          00            MAXOLD=MAXIND(IPOL,IMOD,IREG)
     25.          00            IF(MAXOLD.GE.10) GO TO 100
     26.          00            NEWMAX=MAXOLD+1
     27.          00            MAXIND(IPOL,IMOD,IREG)=NEWMAX
     28.          00      C
     29.          00            DO 50 IMY=MYFRST,MYLAST
     30.          00            MY=IMY-65
     31.          00            INDX3R(MY,IPOL,IMOD+(IREG-1)*6)=NEWMAX
     32.          00       50     CONTINUE
     33.          00      C
     34.          00            BASE3R(NEWMAX,IPOL,IMOD+(IREG-1)*6)=R4ALT(1,IFAC)
     35.          00            DEL3R(NEWMAX,IPOL,IMOD+(IREG-1)*6)=R4ALT(2,IFAC)
     36.          00      C
     37.          00            MODFLG(IFAC)=1
     38.          00      100   CONTINUE
     39.          00            RETURN
     40.          00            END

END ELT.  ERRORS: NONE. TIME:  0.221 SEC. IMAGE COUNT: 40

@HDG,P  ******  EFCALX  ******
```

```
      00      111  FORMAT(3X,6I2,I3,F10.0)
      00           IF(NPATHS.LT.1.OR.NPATHS.GT.25) GO TO 115
      00           DO 112 I=1,NPATHS
      00           IF(NSEG(I).LT.1.OR.NSEG(I).GT.20) GO TO 115
      00      112  CONTINUE
      00           IF(NGRID.LT.1.OR.NGRID.GT.500) GO TO 115
      00           IF(CONVRT.LE.0.) GO TO 115
      00           GO TO 120
      00      115  WRITE(IWRI,119)
      00      119  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 2M)
      00           ISTOP=1
      00           WRITE(IWRI,107)
      00      C
      00      C
      00      C    READ AND EDIT CARD TYPE 3
      00      C
      00      C
      00           NINT=0
      00           DO 123 IP=1,NPATHS
      00           NSEGS=NSEG(IP)
      00           DO 122 IS=1,NSEGS
      00           N4M(IP,IS)=0
      00           IF(MODRUN.EQ.2) GO TO 126
      00      C
      00      C    ANNUAL MODE
      00           READ(IREAD,121) NPATH,LINK,LINTOP(IP,IS),LINTYP(IP,IS),
      00          1(VOLHR(IP,IS,M),M=1,4),IVFORM(IP,IS),IVSPRD(IP,IS),
      00          2LINCAP(IP,IS),(MLANE(IP,IS,M),M=1,2),LANWID(IP,IS),
      00          3(LINSPD(IP,IS,M),M=1,4),X1(IP,IS),Y1(IP,IS),X2(IP,IS),
      00          4Y2(IP,IS),INTYPE(IP,IS),INTDAT(IP,IS)
      00       121 FORMAT(3X,2I2,2I1,4F6.0,2I2,I5,2I1,5I2,4F6.0,2I1)
      00           GO TO 127
      00      C
      00      C    SHORT-TERM MODE
      00      126  READ(IREAD,1121) NPATH,LINK,LINTOP(IP,IS),LINTYP(IP,IS),
      00          1(VOLHR(IP,IS,M),M=1,2),IBOUND,IVFORM(IP,IS),IVSPRD(IP,IS),
      00          2LINCAP(IP,IS),(MLANE(IP,IS,M),M=1,2),LANWID(IP,IS),
      00          3(LINSPD(IP,IS,M),M=1,2),X1(IP,IS),Y1(IP,IS),X2(IP,IS),
      00          4Y2(IP,IS),INTYPE(IP,IS),INTDAT(IP,IS)
      00      1121 FORMAT(3X,2I2,2I1,2F6.0,1X,I1,10X,2I2,I5,2I1,3I2,4X,4F6.0,2I1)
      00      127  IF(NPATH.NE.IP) GO TO 128
      00           IF(LINK.NE.IS) GO TO 128
      00           IF(LINTYP(IP,IS).LT.1.OR.LINTYP(IP,IS).GT.3) GO TO 128
      00           IF(X1(IP,IS).LE.0.0.OR.Y1(IP,IS).LE.0.) GO TO 128
      00           IF(X2(IP,IS).LE.0.0.OR.Y2(IP,IS).LE.0.) GO TO 128
      00           IF(LPATH.NE.2) GO TO 125
      00           DO 124 IPOL=2,2
      00           ERATEA(IP,IS,IPOL)=VOLHR(IP,IS,1)+VOLHR(IP,IS,2)
      00           IF(MODRUN.EQ.2) GO TO 124
      00           ERATEP(IP,IS,IPOL)=VOLHR(IP,IS,3)+VOLHR(IP,IS,4)
      00      124  CONTINUE
      00           GO TO 122
      00      125  IF(IVFORM(IP,IS).NE.-1.AND.IVFORM(IP,IS).NE.1) GO TO 128
      00           IF(IVSPRD(IP,IS).LT.-1.OR.IVSPRD(IP,IS).GT.1) GO TO 128
      00           IF(INTYPE(IP,IS).LT.0.OR.INTYPE(IP,IS).GT.3) GO TO 128
      00           IF(INTYPE(IP,IS).NE.0) NINT=NINT+1
      00           GO TO 122
      00      128  WRITE(IWRI,129)
      00      129  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 3M)
      00           ISTOP=1
      00           WRITE(IWRI,107)
      00      122  CONTINUE
      00      123  CONTINUE
      00      C
      00      C
      00      C    READ CARD TYPE 4
```

```
@ELT,L CEM.MAPCEMAP
ELT 0A: a7491C 04/23/82 15:45:05 (2)
     1.          01     @MAP  CEM.CEMAP
     2.          00       IN CEM.CEMAP
     3.          02       IN CEM.COMOUT
     4.          00       IN CEM.INDATA
     5.          00       IN CEM.TRAF
     6.          00       IN CEM.FREE
     7.          00       IN CEM.GRAF
     8.          00       IN CEM.ART
     9.          00       IN CEM.MODE
    10.          00       IN CEM.EMISS
    11.          00       IN CEM.NPATHE
    12.          00       IN CEM.DISPRS
    13.          00       IN CEM.STREET
    14.          00       IN CEM.ROAD
    15.          00       IN CEM.NPATHD
    16.          00       IN CEM.SHORTY
    17.          00       IN CEM.STATIS
    18.          00       IN CEM.ANNOUT
    19.          00       IN CEM.BLKDAT1
    20.          00     LIB FTN*RLIB.
    21.          00     END

END ELT.  ERRORS: NONE. TIME:  0.210 SEC. IMAGE COUNT: 21

@MDG,P  ******  MAPPREPRS  ******
```

*** E05 ***

```
    131.          00     C      UNITS OF EXPOSURE EXNPAM ARE G-SEC/M**3
    132.          00            EXNPAM(IPATH,1,IP)=EXNPAM(IPATH,1,IP)+0.5*(CHI1*TT1(IPATH,LINK,1)+
    133.          00           1CHIM*(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1))+CHI2*TT2(IPATH,LINK,1))
    134.          00           2*60.
    135.          00            IF(LINK.NE.NSEGS) GO TO 130
    136.          00            CNPLST(IPATH,IP)=0.5*(((CHI1*TT1(IPATH,LINK,1)+CHI2*TT2(IPATH,LINK
    137.          00           1,1))/(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1)))+CHIM)
    138.          00       130 CONTINUE
    139.          00       140 CONTINUE
    140.          00       145 CONTINUE
    141.          00       150 CONTINUE
    142.          00           RETURN
    143.          00           END

END ELT.  ERRORS: NONE. TIME:  0.379 SEC. IMAGE COUNT: 143

@HDG,P  ******  NPATHE  ******
```

*** E06 ***

```
     65.          00     C
     66.          00     C
     67.          00            DO 970 JWD=1,KWD
     68.          00     C      CONVERT WIND DIRECTION TO VECTOR ORIENTATION
     69.          00            IF(MODRUN.EQ.1) GO TO 12
     70.          00     C      SHORT-TERM MODE
     71.          00            WD=IWD+180.
     72.          00            GO TO 13
     73.          00     C      ANNUAL MODE
     74.          00       12   WD=WDIR(JWD)+180.
     75.          00       13   IF(WD.GE.360.) WD=WD-360.
     76.          00     C      THIS IS WIND ANGLE WITH RESPECT TO LINK
     77.          00            PHI=ABS(WD-LB)
     78.          00            IF(PHI.LE.90.) GO TO 30
     79.          00            IF(PHI.GE.270.) GO TO 20
     80.          00            PHI=ABS(PHI-180.)
     81.          00            GO TO 30
     82.          00       20   PHI=ABS(PHI-360.)
     83.          00     C
     84.          00     C      SET ELEMENT GROWTH BASE
     85.          00       30   IF(PHI.LT.20.) GO TO 35
     86.          00            IF(PHI.LT.50.) GO TO 34
     87.          00            IF(PHI.LT.70.) GO TO 33
     88.          00            BASE=4.
     89.          00            GO TO 40
     90.          00       33   BASE=2.
     91.          00            GO TO 40
     92.          00       34   BASE=1.5
     93.          00            GO TO 40
     94.          00       35   BASE=1.1
     95.          00       40   PHI=RAD*PHI
     96.          00     C
     97.          00     C      IF PHI IS 90 OR ZERO, OFFSET IT VERY SLIGHTLY
     98.          00            IF(PHI.GT.1.5706) PHI=1.5706
     99.          00            IF(PHI.LT.0.00017) PHI=0.00017
    100.          00     C
    101.          00     C
    102.          00     C      BEGIN STABILITY LOOP
    103.          00     C
    104.          00     C
    105.          00            DO 960 JSTAB=KSTAB1,KSTAB2
    106.          00     C      THIS IS ALOG(SIGMA Y) AT 1 M
    107.          00            SY1=ALOG(AY1(JSTAB)*((Z0/3.)**.2)*1.820564)
    108.          00     C      THIS IS ALOG (SIGMA Y) AT 10 KM
    109.          00            SY10=ALOG(AY2(JSTAB)*((Z0/3.)**.07)*1.820564)
    110.          00            PY1=EXP(SY1)
    111.          00            PY2=(SY10-SY1)/DREF
    112.          00     C      THIS IS ALOG (SIGMA Z) AT 10 KM
    113.          00            SZ10=ALOG(AZ(JSTAB)*((Z0/10.)**.07)*1.820564)
    114.          00     C
    115.          00     C
    116.          00     C      BEGIN WIND SPEED LOOP--ONLY FIRST 3 WIND SPEEDS ARE USED.
    117.          00     C      NORMALIZED CONCENTRATIONS CALCULATED FOR WS CLASS 3 WILL BE USED
    118.          00     C      FOR WS CLASSES 4, 5, AND 6.  NORMALIZED CONCENTRATIONS ARE NOT
    119.          00     C      QUITE NORMALIZED BECAUSE WIND SPEED IS USED IN COMPUTING INITIAL
    120.          00     C      SIGMA Z.  HOWEVER, VARIATION IN INITIAL SIGMA Z BETWEEN WIND
    121.          00     C      SPEED CLASSES 3 AND 6 IS UNDER 10 PERCENT.
    122.          00     C
    123.          00     C
    124.          00            DO 950 IWS=1,JWS
    125.          00     C
    126.          00     C      SIGMA Z POWER CURVE
    127.          00            SGN=1.
    128.          00            IF(MODRUN.EQ.1) GO TO 54
    129.          00            TR=W2/WS
    130.          00            GO TO 55
```

*** E07 ***

```
      01            IF(IW.GT.3) IW=3
      01            AMNEXP=EXNPAM(IPATH,ISTAB,IP)/WSPD(IWSPD)
      01            PMNEXP=EXNPPM(IPATH,ISTAB,IP)/WSPD(IWSPD)
      01            AMPEXP=EXNSAM(IPATH,ISTWD,IW)/WSPD(IWSPD)+
      01           1EXST(IPATH,IP,1)/(0.5+WSPD(IWSPD))
      01            PMPEXP=EXNSPM(IPATH,ISTWD,IW)/WSPD(IWSPD)+
      01           1EXST(IPATH,IP,2)/(0.5+WSPD(IWSPD))
      01            AMEXP=AMPEXP+AMNEXP
      01            PMEXP=PMPEXP+PMNEXP
      01            IF(IPATH.NE.NOPT3) GO TO 80
      01      C
      01      C     IF THIS CASE IS FLAGGED FOR OPTIONAL OUTPUT 3, SAVE EXPOSURE
      01      C     VALUES
      01            DO 70 IOPT3=1,JOPT3
      01            IF(ISTAB.NE.NSTAB3(IOPT3).OR.IWDIR.NE.NWD3(IOPT3)) GO TO 70
      01            IF(IWSPD.EQ.NWS3(IOPT3)) GO TO 72
      01       70   CONTINUE
      01            GO TO 80
      01       72   EXP3(IOPT3,IP,1)=AMEXP
      01            EXP3(IOPT3,IP,2)=PMEXP
      01      C     WEIGHT CASE EXPOSURE BY FREQUENCY OF OCCURRENCE AND ADD TO
      01      C     EXPOSURE SUM
      01       80   EXP(IPATH,IP,1)=EXP(IPATH,IP,1)+AMEXP*FREQA(ISTAB,IWDIR,IWSPD)
      01            EXP(IPATH,IP,2)=EXP(IPATH,IP,2)+PMEXP*FREQP(ISTAB,IWDIR,IWSPD)
      01            EXPP(IPATH,IP,1)=EXPP(IPATH,IP,1)+AMPEXP*FREQA(ISTAB,IWDIR,
      01           1IWSPD)
      01            EXPP(IPATH,IP,2)=EXPP(IPATH,IP,2)+PMPEXP*FREQP(ISTAB,IWDIR,
      01           1IWSPD)
      01            EXPNP(IPATH,IP,1)=EXPNP(IPATH,IP,1)+AMNEXP*FREQA(ISTAB,IWDIR,
      01           1IWSPD)
      01            EXPNP(IPATH,IP,2)=EXPNP(IPATH,IP,2)+PMNEXP*FREQP(ISTAB,IWDIR,
      01           1IWSPD)
      01      C     DETERMINE EXPOSURE CLASS
      01            DO 85 ICA=1,10
      01            IF(AMEXP.LE.ICA*EINTVL(IP)) GO TO 86
      01       85   CONTINUE
      01       86   DO 87 ICP=1,10
      01            IF(PMEXP.LE.ICP*EINTVL(IP)) GO TO 88
      01       87   CONTINUE
      01      C     WEIGHT NO. OF COMMUTERS BY FREQUENCY OF OCCURRENCE AND ADD TO
      01      C     COMMUTER SUM
      01       88   COMSUM(ICA,IP,1)=COMSUM(ICA,IP,1)+NCOMM(IPATH,1)*FREQA(ISTAB,IWDIR
      01           1,IWSPD)
      01            COMSUM(ICP,IP,2)=COMSUM(ICP,IP,2)+NCOMM(IPATH,2)*FREQP(ISTAB,IWDIR
      01           1,IWSPD)
      01      C
      01      C     STORE OPTIONAL OUTPUT1, IF CALLED FOR
      01            IF(JOPT1.EQ.0) GO TO 95
      01            DO 90 KP=1,JOPT1
      01            IF(IPATH.EQ.NOPT1(KP)) GO TO 91
      01       90   CONTINUE
      01            GO TO 95
      01       91   COM01A(ICA,IP,KP)=COM01A(ICA,IP,KP)+NCOMM(IPATH,1)*FREQA(ISTAB,
      01           1IWDIR,IWSPD)
      01            COM01P(ICP,IP,KP)=COM01P(ICP,IP,KP)+NCOMM(IPATH,2)*FREQP(ISTAB,
      01           1IWDIR,IWSPD)
      01      C     WEIGHT COMMUTE-SECONDS BY FREQUENCY OF OCCURRENCE AND ADD TO
      01      C     COMMUTE-SECONDS SUM
      01       95   CMNSUM(ICA,IP,1)=CMNSUM(ICA,IP,1)+NCOMM(IPATH,1)*TOTTT(IPATH,1)*
      01           1FREQA(ISTAB,IWDIR,IWSPD)
      01            CMNSUM(ICP,IP,2)=CMNSUM(ICP,IP,2)+NCOMM(IPATH,2)*TOTTT(IPATH,2)*
      01           1FREQP(ISTAB,IWDIR,IWSPD)
      01      C
      01      C     STORE OPTIONAL OUTPUT 2, IF CALLED FOR
      01            IF(JOPT2.EQ.0) GO TO 105
      01            DO 100 KP=1,JOPT2
```

```
*** E09 ***                                                                                                    *** E09 ***
@ELT,L CEM.TRKOPC
ELT 8R1 S7491C 04/23/82 15:45:35 (Q)
     1.          00          SUBROUTINE TRKOPC(CY,HGWGT,HDWGT,HGCID,HDCID)                                    00121400
     2.          00     C                                                                                     00121500
     3.          00          COMMON/RET2/TRKRET(20,3,2)                                                       00121600
     4.          00          INTEGER CY,INDXAR(45)                                                            00121700
     5.          00     C**IN B0,B1 AND B2, 1ST INDEX IS YEAR GROUP, 2ND IS VEHTYPE,3RD IS POL               00121800
     6.          00          REAL B0(3,2,3),B1(3,2,3),B2(3,2,3)                                               00121900
     7.          00     C                                                                                     00122000
     8.          00          DATA B0/1.302,-.584,.762,2.058,2.058,.893,                                       00122100
     9.          00         *        .814,.554,.420,-.533,-.533,-.299,                                        00122200
    10.          00         *        .869,.883,.943,.085,.085,.138    /                                       00122300
    11.          00     C                                                                                     00122400
    12.          00          DATA B1/.177,.124,.131,-.005,-.005,.015,                                         00122500
    13.          00         *       -.036,.106,.149,-.03,-.03,.03,                                            00122600
    14.          00         *        .172,.016,.008,.02,.02,.023      /                                       00122700
    15.          00     C                                                                                     00122800
    16.          00          DATA B2/-.065,-.01,-.047,-.014,-.014,-.006,                                      00122900
    17.          00         *        .016,-.024,-.045,.043,.043,.003,                                         00123000
    18.          00         *       -.054,-.003,-.012,.002,.002,.001  /                                       00123100
    19.          00     C                                                                                     00123200
    20.          00          DATA INDXAR/19*1,4*2,22*3/                                                       00123300
    21.          00     C                                                                                     00123400
    22.          00          DO 100 IMY=1,20                                                                  00123500
    23.          00     C                                                                                     00123600
    24.          00             MY = CY - (20-IMY) - 50                                                       00123700
    25.          00             IX=INDXAR(MY)                                                                 00123800
    26.          00     C                                                                                     00123900
    27.          00          DO 100 IPOL = 1,3                                                                00124000
    28.          00     C                                                                                     00124100
    29.          00          TRKRET(IMY,IPOL,1) = B0(IX,1,IPOL) + B1(IX,1,IPOL)*HGWGT*.001 +                  00124200
    30.          00         *                     B2(IX,1,IPOL)*HGWGT/HGCID                                  00124300
    31.          00     C                                                                                     00124400
    32.          00          TRKRET(IMY,IPOL,2) = B0(IX,2,IPOL) + B1(IX,2,IPOL)*HDWGT*.001 +                  00124500
    33.          00         *                     B2(IX,2,IPOL)*HDWGT/HDCID                                  00124600
    34.          00     C                                                                                     00124700
    35.          00     100  CONTINUE                                                                         00124800
    36.          00     C                                                                                     00124900
    37.          00          RETURN                                                                           00125000
    38.          00     C    DEBUG SUBCHK                                                                     00125100
    39.          00          END                                                                              00125200

END ELT.  ERRORS: NONE. TIME:  0.276 SEC. IMAGE COUNT: 39

@HDG,N

@RKPT PRINT$
```

```
*** F01 ***                                                                                                    *** F01 ***
    65.          00            IF(JOPT1.EQ.0) GO TO 40
    66.          00            DO 38 KP=1,JOPT1
    67.          00            WRITE(IWRI,31) NOPT1(KP)
    68.          00       31   FORMAT(//////,33X,8HPATHWAY ,I4)
    69.          00            WRITE(IWRI,21)
    70.          00            DO 35 IC=1,10
    71.          00            V1=(IC-1)*EINTVL(IP)
    72.          00            V2=V1+EINTVL(IP)
    73.          00       35   WRITE(IWRI,36) IC,V1,V2,COM01A(IC,IP,KP),COM01P(IC,IP,KP)
    74.          00       36   FORMAT(3X,I2,6X,2(1X,E10.3),2X,2(5X,F4.0))
    75.          00       38   CONTINUE
    76.          00       C
    77.          00       C    PRINT OPTIONAL OUTPUT 2, IF CALLED FOR
    78.          00        40  IF(JOPT2.EQ.0) GO TO 50
    79.          00            DO 48 KP=1,JOPT2
    80.          00            WRITE(IWRI,31) NOPT2(KP)
    81.          00            WRITE(IWRI,21)
    82.          00            DO 45 IC=1,10
    83.          00            V1=(IC-1)*EINTVL(IP)
    84.          00            V2=V1+EINTVL(IP)
    85.          00       45   WRITE(IWRI,46) IC,V1,V2,CMNO2A(IC,IP,KP),CMNO2P(IC,IP,KP)
    86.          00       46   FORMAT(3X,I2,6X,2(1X,E10.3),2SX,2(7X,F5.3))
    87.          00       48   CONTINUE
    88.          00       C
    89.          00       C    PRINT OPTIONAL OUTPUT 3, IF CALLED FOR
    90.          00        50  IF(JOPT3.EQ.0) GO TO 100
    91.          00            WRITE(IWRI,51)NOPT3
    92.          00       51   FORMAT(//////,17X,8HPATHWAY ,I4)
    93.          00            WRITE(IWRI,52)
    94.          00       52   FORMAT(//,2X,14HMETEOROLOGICAL,5X,25HEXPOSURE (GRAM SEC/CU. M),/,
    95.          00           14X,10HCONDITIONS,11X,2HAM,13X,2HPM,/)
    96.          00            DO 55 KP=1,JOPT3
    97.          00       55   WRITE(IWRI,56) NMET(KP),(EXP3(KP,IP,IAMPM),IAMPM=1,2)
    98.          00       56   FORMAT(7X,I4,5X,2(5X,E10.3))
    99.          00       100  CONTINUE
   100.          00            RETURN
   101.          00            END

END ELT.  ERRORS: NONE. TIME:  0.304 SEC. IMAGE COUNT: 101

@HDG,P  ******  ART  ******
```

```
     329.          00          * 2.55, 2.92, 1.56, 0.25, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00171300
     330.          00          * 0.0 , 0.0 , 0.01, 0.02, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00171400
     331.          00          * .19, 0.20, 0.20, 0.20, 0.40, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                     00171500
     332.          00          * 2.55, 2.92, 2.92, 2.92, 5.00, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00171600
     333.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00171700
     334.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00171800
     335.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00171900
     336.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00172000
     337.          00          * 0.36, 0.62, 0.62, 0.10, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00172100
     338.          00          * 1.28, 1.12, 1.12, 0.48, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00172200
     339.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  /                 00172300
     340.          00     C                                                                                      00172400
     341.          00     C***IDLE EMISSION FACTOR SLOPE: CALIFORNIA                                             00172500
     342.          00          DATA IDELCA/                                                                      00172600
     343.          00          * 0.18, 0.31, 0.01, 0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00172700
     344.          00          * 2.55, 3.15, 0.08, 0.08, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00172800
     345.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00172900
     346.          00          * 0.18, 0.20, 0.19, 0.05, 0.05, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173000
     347.          00          * 2.55, 2.92, 1.56, 1.56, 0.25, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173100
     348.          00          * 0.0 , 0.0 , 0.0 , 0.02, 0.04, 0.04, 0.04, 0.0 , 0.0 , 0.0 ,                    00173200
     349.          00          * 0.18, 0.20, 0.05, 0.05, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173300
     350.          00          * 2.55, 2.92, 1.56, 1.56, 0.25, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173400
     351.          00          * 0.0 , 0.0 , 0.02, 0.04, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173500
     352.          00          * 0.18, 0.20, 0.20, 0.20, 0.20, 0.20, 0.40, 0.0 , 0.0 , 0.0 ,                    00173600
     353.          00          * 2.55, 2.92, 2.92, 2.92, 2.92, 5.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00173700
     354.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173800
     355.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00173900
     356.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00174000
     357.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00174100
     358.          00          * 0.31, 0.28, 0.28, 0.12, 0.12, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00174200
     359.          00          * 1.80, 3.61, 3.61, 1.18, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00174300
     360.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  /                 00174400
     361.          00     C                                                                                      00174500
     362.          00     C***IDLE EMISSION FACTOR SLOPE: HIGH ALTITUDE                                          00174600
     363.          00          DATA IDELHI/                                                                      00174700
     364.          00          * 0.21, 0.14, 0.02, 0.07, 0.07, 0.07, 0.07, 0.07, 0.0 , 0.0 ,                    00174800
     365.          00          * 0.53, 1.15, 0.98, 0.83, 0.83, 0.67, 0.59, 0.59, 0.0 , 0.0 ,                    00174900
     366.          00          * 0.0 , 0.0 , 0.0 , 0.04, 0.06, 0.06, 0.06, 0.08, 0.0 , 0.0 ,                    00175000
     367.          00          * 0.21, 0.14, 0.08, 0.19, 0.19, 0.19, 0.06, 0.06, 0.0 , 0.0 ,                    00175100
     368.          00          * 0.53, 1.15, 1.24, 1.56, 1.56, 1.56, 0.25, 0.25, 0.0 , 0.0 ,                    00175200
     369.          00          * 0.0 , 0.0 , 0.0 , 0.03, 0.02, 0.02, 0.01, 0.01, 0.02, 0.0 ,                    00175300
     370.          00          * 0.21, 0.14, 0.19, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00175400
     371.          00          * 0.53, 1.15, 1.56, 0.65, 0.25, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00175500
     372.          00          * 0.0 , 0.0 , 0.01, 0.01, 0.02, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00175600
     373.          00          * 0.21, 0.14, 0.14, 0.20, 0.40, 0.40, 0.0 , 0.0 , 0.0 , 0.0 ,                    00175700
     374.          00          * 0.53, 1.15, 1.15, 2.92, 5.00, 5.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00175800
     375.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00175900
     376.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00176000
     377.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00176100
     378.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00176200
     379.          00          * 0.36, 0.62, 0.62, 0.10, 0.10, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00176300
     380.          00          * 0.66, 1.12, 1.12, 0.48, 0.48, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00176400
     381.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,  /                 00176500
     382.          00     C                                                                                      00176600
     383.          00     C                                                                                      00177400
     384.          00     C                                                                                      00177500
     385.          00          DATA DUM1                                                                         00177600
     386.          00          *     / 3, 6,11,15,19,24,27,31,35,39,41,42,44,46,47,48,49,51,                     00177700
     387.          00          *    52,  4, 8,13,18,22,28,33,38,42,45,46,48,50,52,54,55,56,57,                   00177800
     388.          00          *         7,14,20,28,34,39,43,47,49,51,53,55,57,58,59,60,61,62,63,                00177900
     389.          00          *         8,15,22,30,36,41,46,48,50,52,54,56,58,59,61,62,63,64,65,                00178000
     390.          00          *         8,16,23,31,37,42,46,50,54,55,57,59,60,61,62,63,64,65,66,                00178100
     391.          00          *         4, 9,17,19,20,24,25,28,29,30,33,34,35,36,36,37,38,                      00178200
     392.          00          *         6,11,16,20,23,27,31,33,34,38,40,41,44,45,46,47,48,49,                   00178300
     393.          00          *        10,18,24,28,33,36,40,42,45,47,48,50,51,53,55,55,57,58,                   00178400
     394.          00          *        12,20,26,32,37,40,43,46,49,51,52,54,55,56,57,59,59,60,61,                00178500
```

*** F02 ***

```
@ELT,L CEM.EFCALX
ELT 6R1 S7491C 04/23/82 15:44:53 (0)
      1.          00          SUBROUTINE EFCALX(CY,LNKDTA,MS,EFRETM,WTEDEF,CCRETM,IDLRTM,IDLWTD,
      2.          00         1CFRET)
      3.          00     C                                                                          0003870
      4.          00          COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,      0003880
      5.          00         *            UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                   0003890
      6.          00          COMMON/CEVCOM/CCEV                                                     0003900
      7.          00          COMMON/REGCOM/IREJN                                                    0003910
      8.          00          COMMON/BEFCOM/BEF                                                      0003920
      9.          00          COMMON/IDLCOM/IDLBEF                                                   0003930
     10.          00          COMMON/MYMCOM/MYM,MYR,TF                                               0003940
     11.          00     C                                                                          0003950
     12.          00          INTEGER MYP   P     CYP                                                0003960
     13.          00          INTEGER ALHFLG,TRKFLG,ALTFLG,CY SP3FLG,                                0003970
     14.          00         *        NMHFLG,IDLFLG,UNFFLG,MYMRFG,PRTFLG                             0003980
     15.          00     C                                                                          0003990
     16.          00          REAL IDLBEF(20, 1,18),IDLFAC(20,3,6),IDLCMP(3,6),IDLWTD(3)            0004000
     17.          00          REAL IDLRTM(3,6)                                                       0004010
     18.          00          REAL COMPCC(20,6),CCRETM(6)                                            0004020
     19.          00          REAL CFRET(20,3,6)                                                     0004030
     20.          00          REAL      BEF(20, 1, 18),      CCEV(45,6)                              0004040
     21.          00         *          EFRETM(3,6),         COMPEF(20,3,6),                         0004080
     22.          00         *          COMPMY(3,6),         LNKDTA(7),                              0004090
     23.          00         *          MYM(20,6),           MYR(20,6),                              0004100
     24.          00         *          MS(6),               PCCO,                                   0004110
     25.          00         *          PCCC,                PCHS,                                   0004120
     26.          00         *          SPD(3),              TEMP,                                   0004130
     27.          00         *          TF(20,6),            TFNORM(6),                              0004140
     28.          00         *          WTEDEF(3)                                                    0004150
     29.          00     C                                                                          0004160
     30.          00     C                                                                          0004170
     31.          00     C*************************************************************************0004180
     32.          00     C                                                                          0004190
     33.          00          SPD(1)  = LNKDTA(1)                                                   0004200
     34.          00          SPD(2)  = LNKDTA(2)                                                   0004210
     35.          00          SPD(3)  = LNKDTA(3)                                                   0004220
     36.          00          TEMP    = LNKDTA(4)                                                   0004230
     37.          00          PCCO    = LNKDTA(5)                                                   0004240
     38.          00          PCHS    = LNKDTA(6)                                                   0004250
     39.          00          PCCC    = LNKDTA(7)                                                   0004260
     40.          00     C                                                                          0004270
     41.          00     C                                                                          0004280
     42.          00               CALL BIGCFX(CY,TEMP,PCCO,PCHS,PCCC,SPD,CFRET)                    0004290
     43.          00     C                                                                          0004300
     44.          00     C                                                                          0004310
     45.          00          CYP=1                                                                 0004320
     46.          00     C                                                                          0004330
     47.          00     C                                                                          0004340
     48.          00          DO 500 P = 1,3                                                        0004350
     49.          00                    WTEDEF(P) = 0.0                                             0004360
     50.          00                    IDLWTD(P) = 0.0                                             0004370
     51.          00             DO 400 M = 1,6                                                     0004380
     52.          00                    COMPMY(P,M) = 0.0                                           0004390
     53.          00                    IDLCMP(P,M) = 0.0                                           0004400
     54.          00          IF(P.EQ.1) CCRETM(M)=0.                                               0004410
     55.          00               DO 300 I = 1,20                                                  0004420
     56.          00     C                                                                          0004430
     57.          00          MYP = CY -(20-I) - 50                                                 0004440
     58.          00     C                                                                          0004450
     59.          00                    IF (P.EQ.1)  GO TO 333                                      0004460
     60.          00                    GO TO 444                                                   0004470
     61.          00     C                                                                          0004480
     62.          00     333  COMPEF(I,P,M)=(BEF(I,CYP,P+(M-1)*3)*CFRET(I,P,M)+CCEV(MYP,M))
     63.          00         1  *TF(I,M)
     64.          00               COMPCC(I,M)=CCEV(MYP,M)*TF(I,M)
```

*** F03 ***

```
00      C
00      C
00            IF(LPATH.EQ.2) GO TO 140
00            IF(NINT.EQ.0) GO TO 140
00            DO 139 INTS=1,NINT
00        139 READ(IREAD,130) N,L,(ADV(N,L,M),M=1,4),(ACAP(N,L,M),
00           1M=1,4),(CYCL(N,L,M),M=1,2),(GPH(N,L,M),M=1,2),
00           2(VOLBAK(N,L,M),M=1,2),(CAPBAK(N,L,M),M=1,2),(BAKTIM(N,L,M),
00           3M=1,2),(TOLLS(N,L,M),M=1,2)
00        130 FORMAT(3X,2I2,8F4.0,4F3.0,4F4.0,4F2.0)
00      C
00      C
00      C     READ AND EDIT CARD TYPE 5
00      C
00      C
00      140   IF(MODRUN.EQ.2) GO TO 1142
00      C       ANNUAL MODE
00            READ(IREAD,1141)(NCOMM(I,1),I=1,NPATHS),(NCOMM(I,2),I=1,NPATHS)
00      1141  FORMAT(3X,1515)
00            GO TO 1143
00      C
00      C       SHORT TERM MODE
00      1142  READ(IREAD,1141)(NCOMM(I,1),I=1,NPATHS)
00      1143  DO 1145 I=1,NPATHS
00            IF(NCOMM(I,1).LE.0) GO TO 1148
00            IF(MODRUN.EQ.2) GO TO 1145
00            IF(NCOMM(I,2).LE.0) GO TO 1148
00      1145  CONTINUE
00            GO TO 1140
00      1148  WRITE(IWRI,1149)
00      1149  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 5M)
00            ISTOP=1
00            WRITE(IWRI,107)
00      C
00      C
00      C     READ AND EDIT CARD TYPE 6
00      C
00      C
00      1140  IF(MODRUN.EQ.2) GO TO 142
00      C
00      C     ANNUAL MODE
00            READ(IREAD,141) IAMPC,IPMPC,(RATSEC(I),I=1,5)
00       141  FORMAT(3X,2I3,5F5.0)
00            IF(IAMPC.LT.0.OR.IAMPC.GT.100) GO TO 147
00            IF(IPMPC.LT.0.OR.IPMPC.GT.100) GO TO 147
00            GO TO 145
00      C
00      C     SHORT-TERM MODE
00       142  READ(IREAD,143) IPCWH,(RATSEC(I),I=1,5)
00       143  FORMAT(3X,I3,5F5.0)
00            IF(IPCWH.LT.0.OR.IPCWH.GT.100) GO TO 147
00       145  IF(LNPATH.EQ.2) GO TO 150
00            DO 146 I=1,5
00            IF(RATSEC(I).LT.0.0) GO TO 147
00       146  CONTINUE
00            GO TO 150
00       147  WRITE(IWRI,149)
00       149  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 6M)
00            ISTOP=1
00            WRITE(IWRI,107)
00      C
00      C
00      C     READ AND EDIT CARD TYPE 7
00      C
00      C
00       150  DO 153 IG=1,NGRID
```

*** F04 ***

```
*** F05 ***                                                                    *** F05 ***
@ELT,L  CEM.MAPPREPRS
ELT 881 S74Q1C 04/23/82 15:45:07 (1)
     1.          00     @MAP  ,CEM.PREPRS
     2.          01      IN CEM.PREPRS
     3.          01      IN CEM.FTP
     4.          01      IN CEM.CORFAC
     5.          01      IN CEM.MODMOD
     6.          01      IN CEM.MOBLE1
     7.          01      IN CEM.INPUT
     8.          01      IN CEM.OUTPUT
     9.          01      IN CEM.EFCALX
    10.          01      IN CEM.BIGCFX
    11.          01      IN CEM.TRKOPC
    12.          01      IN CEM.SPFCLX
    13.          01      IN CEM.INITEX
    14.          01      IN CEM.TFCALX
    15.          01      IN CEM.EFALTX
    16.          01      IN CEM.GETCUM
    17.          01      IN CEM.BEFGEN
    18.          01      IN CEM.ALUM
    19.          01      IN CEM.CCEVAX
    20.          01      IN CEM.LOVIMX
    21.          01      IN CEM.BLKDAT
    22.          00     LIB FTN*RLIB.
    23.          00     END

END ELT.  ERRORS: NONE. TIME:  0.213 SEC. IMAGE COUNT: 23

@HDG,P  ******  MOBLE1  ******
```

```
@ELT,L CEM.NPATHE
ELT 8R1 S7401C 04/23/82 15:45:15 (0)
```

```
      1.            00            SUBROUTINE NPATHE
      2.            00      C
      3.            00      C
      4.            00      C     THIS SUBROUTINE COMPUTES THE EMISSION RATES FOR EACH GRID SQUARE
      5.            00      C     (FROM NON-PATHWAY SOURCES)
      6.            00      C
      7.            00      C
      8.            00            COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
      9.            00            COMMON/RUNTYP/MODRUN
     10.            00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     11.            00            COMMON/GRID/XG(500),YG(500),GVMT(500),IGLOC(500),GEMIS(500),
     12.            00           1GSIZE(500)
     13.            00            COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     14.            00            COMMON/GREMIS/EGRID(500,3,2)
     15.            00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     16.            00            COMMON/EMSFAC/OUTFAC(2,11,3),GRDFAC(2,5,3),EMCR1(2,3,6),
     17.            00           1EMAD1(2,3,6),EMIDLE(3)
     18.            00            IF(MODRUN.EQ.2) GO TO 51
     19.            00      C
     20.            00      C     ANNUAL MODE
     21.            00      C
     22.            00            IF(LNPATH.EQ.2) GO TO 40
     23.            00      C
     24.            00      C     COMPUTE GRID SQUARE EMISSION RATE
     25.            00            DO 20 IG=1,NGRID
     26.            00      C     CONVERT SIZE OF GRID SQUARE TO KM
     27.            00            GSIZE(IG)=GSIZE(IG)*1.6093*CONVRT
     28.            00      C     DETERMINE LOCALE TYPE
     29.            00            LOC=IGLOC(IG)
     30.            00      C     INCLUDE SECONDARY STREET VMT
     31.            00            VMT=GVMT(IG)*(1.+RATSEC(LOC))
     32.            00      C     CONVERT DAILY VMT TO HOURLY VMT, MULTIPLY BY EMISSION FACTOR, AND
     33.            00      C     DIVIDE BY AREA TIMES SEC/HR CONVERSION FACTOR
     34.            00      C     EMISSION RATE EGRID IS IN GRAMS/M**2-SEC
     35.            00            DENOM=3.6E11*GSIZE(IG)**2
     36.            00            DO 10 IP=2,2
     37.            00            EGRID(IG,IP,1)=VMT*GRDFAC(1,LOC,IP)*IAMPC/DENOM
     38.            00       10   EGRID(IG,IP,2)=VMT*GRDFAC(2,LOC,IP)*IPMPC/DENOM
     39.            00       20   CONTINUE
     40.            00            GO TO 100
     41.            00      C
     42.            00      C     CONVERT USER-SUPPLIED DAILY EMISSION RATE TO HOURLY EMISSION RATE
     43.            00       40   DO 50 IG=1,NGRID
     44.            00            DO 50 IP=2,2
     45.            00            EGRID(IG,IP,1)=GEMIS(IG)*IAMPC/3.6E5
     46.            00       50   EGRID(IG,IP,2)=GEMIS(IG)*IPMPC/3.6E5
     47.            00            GO TO 100
     48.            00      C
     49.            00      C     SHORT-TERM MODE
     50.            00      C
     51.            00       51   IF(LNPATH.EQ.2) GO TO 70
     52.            00      C
     53.            00      CC     COMPUTE GRID SQUARE EMISSION RATE
     54.            00            DO 60 IG=1,NGRID
     55.            00      C     CONVERT SIZE OF GRID SQUARE TO KM
     56.            00            GSIZE(IG)=GSIZE(IG)*1.6093*CONVRT
     57.            00      C     DETERMINE LOCALE TYPE
     58.            00            LOC=IGLOC(IG)
     59.            00      C     INCLUDE SECONDARY STREET VMT
     60.            00            VMT=GVMT(IG)*(1.+RATSEC(LOC))
     61.            00      C     CONVERT DAILY VMT TO HOURLY VMT, MULTIPLY BY THE EMISSION FACTOR,
     62.            00      C     AND DIVIDE BY AREA TIMES SEC/HR CONVERSION FACTOR
     63.            00      C     EMISSION RATE EGRID IS IN GRAMS/M**2-SEC
     64.            00            DO 55 IP=2,2
```

```
      00      54   TR=W2/WSPD(IWS)
      00    C      THIS IS ALOG (SIGMA Z) AT W2
      00      55   SGZ1=ALOG(1.8+0.11*TR)+1.148698
      00           PZ2=(SZ10-SGZ1)/(DREF-ALOG(W2))
      00           PZ1=EXP((SZ10+SGZ1-PZ2*(DREF+ALOG(W2)))/2.)
      00           DO 56 IAMPH=1,KTIME
      00           DO 56 IP=2,2
      00      56   CON(IAMPH,IP)=0.
      00      80   IF(SGN.EQ.-1.0.AND.UWL.GT.0.0.AND.DWL.GE.0.) GO TO 900
      00    C
      00    C      ELEMENT LOOP
      00           ED1=0.
      00           ED2=SGN*WL
      00    C      INITIALIZATION OF ELEMENT LIMITS
      00     110   IF(SGN.EQ.-1.) GO TO 160
      00           IF(ED1.LE.DWL.AND.ED2.LE.DWL) GO TO 770
      00           IF(ED1.GT.DWL.AND.ED2.LT.UWL) GO TO 250
      00           IF(ED1.LE.DWL) ED1=DWL
      00           IF(ED2.LT.UWL) GO TO 250
      00           ED2=UWL
      00           SGN=-1.
      00           NE=-1.
      00           GO TO 250
      00     160   IF(ED1.GE.UWL.AND.ED2.GE.UWL) GO TO 770
      00           IF(ED1.LT.UWL.AND.ED2.GT.DWL) GO TO 250
      00           IF(ED1.GE.UWL) ED1=UWL
      00           IF(ED2.GT.DWL) GO TO 250
      00           ED2=DWL
      00           FINI=0.
      00    C      THESE ARE ELEMENT HALF-DISTANCE AND CENTERLINE DISTANCE
      00     250   EL2=ABS(ED2-ED1)/2.
      00           ECLD=(ED1+ED2)/2.
      00    C      THIS IS EQUIVALENT LINE HALF-LENGTH
      00           ELL2=W2/COS(PHI)+(EL2-W2*TAN(PHI))*SIN(PHI)
      00    C      THESE ARE CENTRAL SUB-ELEMENT HALF-LENGTH AND HALF-WIDTH
      00           IF(PHI.GE.ATAN(W2/EL2))CSL2=W2/SIN(PHI)
      00           IF(PHI.LT.ATAN(W2/EL2))CSL2=EL2/COS(PHI)
      00           EM2=ABS((EL2-W2/TAN(PHI))*SIN(PHI))
      00    C      THIS IS PERIPHERAL SUB-ELEMENT WIDTH
      00           EN2=(ELL2-EM2)/2.
      00    C       THIS IS THE CENTRAL SUBELEMENT LINEAL SOURCE STRENGTH IN GRAMS/
      00    C      M-SEC
      00           DO 255 IP=2,2
      00           QE(1,IP)=ERATEA(IPATH,LINK,IP)*CSL2/W2
      00           IF(MODRUN.EQ.2) GO TO 255
      00           QE(2,IP)=ERATEP(IPATH,LINK,IP)*CSL2/W2
      00     255   CONTINUE
      00    C      THIS IS ELEMENT FETCH
      00           FET=ECLD*COS(PHI)
      00    C      THIS IS Y DISTANCE FROM ELEMENT CENTER TO RECEPTOR
      00           YE=ECLD*SIN(PHI)
      00    C
      00    C      DETERMINE SIGMA Y AND SIGMA Z
      00           IF(FET.LE.-CSL2) GO TO 830
      00           IF(FET.GE.CSL2) GO TO 320
      00    C      RECEPTOR WITHIN ELEMENT
      00           DO 260 IP=2,2
      00           DO 260 IAMPH=1,KTIME
      00     260   QE(IAMPH,IP)=QE(IAMPH,IP)*(FET+CSL2)/(2.*CSL2)
      00           FET=(CSL2+FET)/2.
      00     320   SGZ=PZ1*FET**PZ2
      00           SGY=PY1*FET**PY2
      00    C      THIS IS SOURCE STRENGTH-WIND SPEED FACTOR
      00           FAC1=0.399/(SGZ)
      00    C
      00    C      ADJUSTMENT FOR ELEMENT END EFFECT
```

*** F07 ***

```
      IF(IPATH.EQ.NOPT2(KP)) GO TO 101
  100 CONTINUE
      GO TO 105
  101 CMNO2A(ICA,IP,KP)=CMNO2A(ICA,IP,KP)+NCOMM(IPATH,1)*TOTTT(IPATH,1)
     1*FREQA(ISTAB,IWDIR,IWSPD)
      CMNO2P(ICP,IP,KP)=CMNO2P(ICP,IP,KP)+NCOMM(IPATH,2)*TOTTT(IPATH,2)
     1*FREQP(ISTAB,IWDIR,IWSPD)
      GO TO 105
C      SET FLAG THAT MET CONDITIONS CALLED FOR IN OPTION 3 NEVER OCCUR
  102 IF(IPATH.NE.NOPT3) GO TO 105
      DO 103 IOPT3=1,JOPT3
      IF(ISTAB.NE.NSTAB3(IOPT3).OR.IWDIR.NE.NWD3(IOPT3)) GO TO 103
      IF(IWSPD.EQ.NWS3(IOPT3)) GO TO 104
  103 CONTINUE
      GO TO 105
  104 EXP3(IOPT3,IP,1)=-99.
      EXP3(IOPT3,IP,2)=-99.
  105 CONTINUE
  106 CONTINUE
  110 CONTINUE
C
C     ADD AVERAGE PATHWAY EXPOSURE TO NETWORK EXPOSURE SUM AND COMPUTE
C     AVERAGE PATHWAY CONCENTRATION FOR EACH PATHWAY
      DO 111 IAMPM=1,2
      EXPSUM(IP,IAMPM)=EXPSUM(IP,IAMPM)+EXP(IPATH,IP,IAMPM)
  111 AVCONC(IP,IPATH,IAMPM)=EXP(IPATH,IP,IAMPM)/TOTTT(IPATH,IAMPM)
C
C     MAKE REMAINING COMPUTATIONS FOR OPTION 1, IF CALLED FOR
      IF(JOPT1.EQ.0) GO TO 120
      DO 115 KP=1,JOPT1
      IF(IPATH.EQ.NOPT1(KP)) GO TO 116
  115 CONTINUE
      GO TO 120
  116 TSUMA=0.
      TSUMP=0.
      DO 117 IC=1,10
      TSUMA=TSUMA+COMO1A(IC,IP,KP)
  117 TSUMP=TSUMP+COMO1P(IC,IP,KP)
      DO 118 IC=1,10
      COMO1A(IC,IP,KP)=COMO1A(IC,IP,KP)/TSUMA*100.
  118 COMO1P(IC,IP,KP)=COMO1P(IC,IP,KP)/TSUMP*100.
C
C     MAKE REMAINING COMPUTATIONS FOR OPTION 2, IF CALLED FOR
  120 IF(JOPT2.EQ.0) GO TO 130
      DO 125 KP=1,JOPT2
      IF(IPATH.EQ.NOPT2(KP)) GO TO 126
  125 CONTINUE
      GO TO 130
  126 TSUMA=0.
      TSUMP=0.
      DO 127 IC=1,10
      TSUMA=TSUMA+CMNO2A(IC,IP,KP)
  127 TSUMP=TSUMP+CMNO2P(IC,IP,KP)
      DO 128 IC=1,10
      CMNO2A(IC,IP,KP)=CMNO2A(IC,IP,KP)/TSUMA
  128 CMNO2P(IC,IP,KP)=CMNO2P(IC,IP,KP)/TSUMP
  130 CONTINUE
  135 CONTINUE
C
C     COMPUTE PERCENTAGE OF COMMUTERS IN EACH CLASS AND PROBABILITY OF
C     EXPERIENCING EXPOSURE LEVELS IN EACH CLASS
      DO 143 IAMPM=1,2
      DO 143 IP=2,2
      TOTCOM=0.
      TOTCMN=0.
      DO 140 IC=1,10
```

*** F08 ***

```
@ELT L CEM.ART
ELT 8R1 S7401C 04/23/82 15:44:38 (0)
     1.           00          SUBROUTINE ART(N,L,M,K9,M9)
     2.           00      C   THIS SUBROUTINE TREATS TRAFFIC ON ARTERIALS.
     3.           00          COMMON/RUNTYP/MODRUN
     4.           00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
     5.           00         1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
     6.           00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     7.           00          COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
     8.           00          COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     9.           00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
    10.           00          COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
    11.           00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
    12.           00          COMMON/SPREAD/ DIURN(3,2,2),SEASON(3,12)
    13.           00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
    14.           00          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTT(5,2)
    15.           00          COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
    16.           00      C
    17.           00      C
    18.           00      C
    19.           00      C
    20.           00      C
    21.           00      C
    22.           00          LNKDIR=M9
    23.           00          IHOUR=1
    24.           00          IF (M.GE.3.OR.MODRUN.EQ.2.AND.IBOUND.EQ.2) IHOUR=2
    25.           00          IF(LPATH.EQ.1) GO TO 5
    26.           00          LSPEED=5*INT(LINSPD(N,L,M)/5.+0.5)
    27.           00          LINSPD(N,L,M)=LSPEED
    28.           00          IF(LSPEED.GT.5) GO TO 50
    29.           00          WRITE(6,15)
    30.           00         15 FORMAT( 1X,98HWARNING.  NON-ZERO SPEED MUST BE INPUT WITH EMISSION
    31.           00           1S.  A VALUE OF 35 MPH IS ASSUMED FOR THIS RUN.)
    32.           00          LINSPD(N,L,M)=35
    33.           00          GO TO 50
    34.           00          5 LNKTYP=LINTYP(N,L)
    35.           00            IF(IVSPRD(N,L)) 10,20,30
    36.           00      C   VOLUMES ARE ADT
    37.           00         10 VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
    38.           00            GO TO 35
    39.           00      C   VOLUMES ARE AADT.
    40.           00         30 IF(MODRUN.EQ.1) GO TO 10
    41.           00            MON=IDATE(2)
    42.           00            VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
    43.           00           1*SEASON(LNKTYP,MON)
    44.           00            GO TO 35
    45.           00         20 VOLHR(N,L,M)=VOLHR(N,L,M)
    46.           00         35 IF(IVFORM(N,L).NE.-1) VOLHR(N,L,M)=VOLHR(N,L,M)*NLANE(N,L,M9)
    47.           00      C   VARIABLE LINSPD DENOTES THE SPEED IN MPH ON THE LINK.  A VALUE OF
    48.           00      C   0 IMPLIES THAT SPEED IS TO BE CALCULATED.  THIS REQUIRES THAT
    49.           00      C   CAPACITY BE KNOWN.
    50.           00          IF(LINSPD(N,L,M).GT.0) GO TO 50
    51.           00          IF(LINCAP(N,L).GT.0) GO TO 40
    52.           00          LINCAP(N,L)=1500.
    53.           00          IF(IVFORM(N,L).NE.-1) LINCAP(N,L)=NLANE(N,L,M9)*1500.
    54.           00         40 VC=VOLHR(N,L,M)/LINCAP(N,L)
    55.           00            IF(VC.LE.1.0) GO TO 45
    56.           00      C
    57.           00      C
    58.           00      C
    59.           00          WRITE(6,100) N,L
    60.           00      C
    61.           00      C
    62.           00      C
    63.           00        100 FORMAT( 1X,25HWARNING. **************** ,/,1X,44H VOLUME IS GREATER
    64.           00           1THAN CAPACITY ON PATHWAY ,I3,7H, LINK ,I3,1H.,/,1X,68H VOLUME IS B
```

```
395.          00          *          13,22,28,34,39,43,46,49,51,54,55,57,58,59,61,61,62,63,64/   00178500
396.          00           DATA DUM2/                                                           00178600
397.          00          *          4,11,22,32,42,49,54,58,62,64,66,68,69,71,72,73,74,74,75,    00178700
398.          00          *          4,12,23,33,41,46,51,56,62,65,67,69,71,72,73,74,75,76,77,    00178800
399.          00          *          5,12,24,34,40,45,50,55,60,64,67,69,71,73,75,76,77,77,78,    00178900
400.          00          *          5,13,25,35,41,45,49,53,58,63,66,69,72,74,75,76,77,78,79,    00179000
401.          00          *          5,13,25,36,42,46,49,53,57,59,63,67,70,72,73,75,76,77,78,    00179100
402.          00          *          5,13,25,36,43,47,49,53,56,58,60,62,63,65,66,67,68,69,       00179200
403.          00          *          5,13,25,36,43,48,49,51,54,57,60,62,63,65,66,67,68,69,70,    00179300
404.          00          *          5,13,25,36,43,48,50,51,53,55,58,60,62,64,65,67,68,69,70,71, 00179400
405.          00          *          5,13,25,36,43,48,52,53,56,59,61,63,65,66,68,69,70,71,71,    00179500
406.          00          *          5,13,25,36,43,48,52,54,56,59,61,63,65,66,68,69,70,71,71,72/ 00179600
407.          00    C                                                                          00179700
408.          00           DATA DUM3                                                           00179800
409.          00          *          / 6,13,17,20,25,32,35,40,45,47,49,50,53,53,54,56,57,57,     00179900
410.          00          * 58,       9,14,19,22,31,36,43,45,50,51,53,54,55,56,58,58,61,63,63,   00180000
411.          00          *          12,19,27,35,41,44,51,53,55,57,59,61,61,63,65,65,66,66,67,   00180100
412.          00          *          13,24,33,40,46,50,54,57,59,61,63,65,65,66,68,68,69,70,71,   00180200
413.          00          *          14,25,35,42,48,53,56,59,62,64,65,66,68,69,70,70,71,72,72,   00180300
414.          00          *          9,13,15,18,22,26,28,31,33,35,37,39,40,42,44,44,45,46,48,    00180400
415.          00          *          13,16,20,26,31,34,38,41,43,44,45,47,48,50,52,52,53,54,55,   00180500
416.          00          *          15,21,28,33,38,41,43,47,50,52,54,56,57,59,60,61,61,62,      00180600
417.          00          *          15,23,31,36,41,44,48,50,52,54,56,58,60,61,62,63,63,65,      00180700
418.          00          *          16,26,33,39,43,47,50,53,55,57,59,60,61,63,64,65,65,66,67/   00180800
419.          00           DATA DUM4/                                                          00180900
420.          00          *          10,33,51,59,67,70,74,76,78,80,80,81,82,83,84,84,85,85,86,   00181000
421.          00          *          15,32,51,62,69,73,76,78,80,81,82,83,83,84,85,85,86,86,87,   00181100
422.          00          *          15,38,54,64,70,74,77,79,81,82,83,84,85,85,86,86,87,87,      00181200
423.          00          *          16,39,54,64,70,74,77,80,81,83,84,85,85,86,87,87,88,88,      00181300
424.          00          *          16,39,54,64,70,74,77,80,81,83,84,85,86,86,87,87,88,88,88,   00181400
425.          00          *          17,39,54,64,70,74,77,80,81,83,84,85,86,86,87,87,88,88,88,   00181500
426.          00          *          17,24,36,52,64,69,72,75,77,78,79,79,80,80,81,81,            00181600
427.          00          *          11,29,45,56,63,68,70,74,76,76,78,80,80,81,82,82,83,84,84,   00181700
428.          00          *          12,32,46,58,65,69,72,75,76,77,80,81,81,82,83,83,84,85,85,   00181800
429.          00          *          14,36,52,62,68,73,76,78,80,81,82,83,84,85,85,86,86,87,87,   00181900
430.          00          *          15,38,54,64,70,74,77,79,81,83,84,85,85,86,87,87,88,88,88/   00182000
431.          00    C                                                                          00182100
432.          00    C                                                                          00182200
433.          00           DATA DUM5                                                           00182300
434.          00          *          / 7,13,17,22,26,30,32,35,37,40,41,42,44,45,46,47,48,50,     00182400
435.          00          * 50,       9,17,22,27,31,35,37,40,42,44,46,48,49,51,52,53,54,55,56,   00182500
436.          00          *          12,21,27,32,36,40,44,47,49,51,53,55,56,58,59,60,61,62,62,   00182600
437.          00          *          14,25,33,39,43,47,50,52,55,56,58,59,60,61,62,63,64,65,      00182700
438.          00          *          15,27,36,41,45,49,52,54,56,58,59,61,62,63,64,65,65,66,      00182800
439.          00          *          19,28,37,43,46,50,52,54,57,58,60,61,61,62,63,64,64,65,      00182900
440.          00          *          17,29,39,44,48,51,54,56,57,59,60,61,62,63,64,64,65,66,      00183000
441.          00          *          21,31,40,46,49,52,54,57,58,60,61,62,63,64,65,65,66,67,      00183100
442.          00          *          23,34,42,47,50,53,55,57,59,60,61,62,63,64,65,66,67,67,      00183200
443.          00          *          23,36,41,45,49,52,54,56,58,60,61,62,63,64,65,66,67,67,68/   00183300
444.          00           DATA DUM6/                                                          00183400
445.          00          *          0, 4, 8,14,20,26,30,33,35,39,42,44,45,48,49,50,50,53,55,    00183500
446.          00          *          0, 5,10,18,23,28,32,37,40,43,45,47,49,51,52,54,56,57,       00183600
447.          00          *          1, 6,13,21,27,33,38,42,45,48,50,52,54,56,57,59,60,61,62,    00183700
448.          00          *          1, 6,14,22,28,34,39,43,47,49,52,54,55,57,58,60,61,62,63,    00183800
449.          00          *          2, 7,14,22,29,35,40,44,47,50,52,54,56,58,59,60,61,62,63,    00183900
450.          00          *          0, 2, 7,13,19,24,29,33,37,40,43,45,47,49,50,52,53,54,55,    00184000
451.          00          *          0, 4,11,19,26,32,37,42,45,48,51,53,55,56,58,59,60,62,62,    00184100
452.          00          *          1, 5,13,21,28,34,40,44,48,51,53,55,57,58,60,61,62,63,64,    00184200
453.          00          *          2, 8,18,26,33,40,47,52,55,58,60,62,63,65,66,67,68,69,70,    00184300
454.          00          *          3,12,23,33,42,48,53,57,60,63,65,66,68,69,70,71,72,73,74/   00184400
455.          00    C                                                                          00184500
456.          00           DATA DUM7                                                           00184600
457.          00          *          /11,20,26,30,34,40,43,47,50,52,53,55,58,57,58,59,61,60,     00184700
458.          00          * 62,      16,23,29,34,39,43,47,51,53,55,57,58,59,60,61,64,66,64,66,66, 00184800
459.          00          *          20,29,37,42,47,51,55,57,59,61,62,64,66,67,68,68,68,73,      00184900
460.          00          *          23,34,41,46,51,55,58,61,63,64,65,67,68,69,70,71,72,73,      00185000
461.          00          *          25,35,42,48,53,57,60,62,65,66,68,69,70,71,72,72,73,74,74,   00185100
```

*** G02 ***

```
          00              GO TO 555                                                          00045100
          00      444     COMPEF(I,P,M)=(BEF(I,CYP,P+(M-1)*3)*CFRET(I,P,M))*TF(I,M)
          00      C                                                                          00045300
          00      555     CONTINUE                                                           00045400
          00      C                                                                          00045500
          00              IDLFAC(I,P,M)=(IDLBEF(I,CYP,P+(M-1)*3)                 )*TF(I,M)   00045600
          00      C                                                                          00045700
          00              COMPMY(P,M) = COMPMY(P,M) + COMPEF(I,P,M)                          00045800
          00              IDLCMP(P,M) = IDLCMP(P,M) + IDLFAC(I,P,M)                          00045900
          00              IF(P.EQ.1) CCRETM(M) = CCRETM(M) + COMPCC(I,M)                     00046000
          00      C                                                                          00046100
          00      300           CONTINUE                                                     00046200
          00              WTEDEF(P) = WTEDEF(P) + COMPMY(P,M)*MS(M)                          00046300
          00              IDLWTD(P) = IDLWTD(P) + IDLCMP(P,M)*MS(M)                          00046400
          00      400        CONTINUE                                                        00046500
          00      C                                                                          00046600
          00      500     CONTINUE                                                           00046700
          00      C                                                                          00046800
          00              DO 600 M = 1,6                                                     00046900
          00              DO 600 P = 1,3                                                     00047000
          00                EFRETM(P,M) = COMPMY(P,M)                                        00047100
          00                IDLRTM(P,M) = IDLCMP(P,M)                                        00047200
          00      600     CONTINUE                                                           00047300
          00      C                                                                          00047400
          00      C                                                                          00047500
          00              RETURN                                                             00047600
          00      C                                                                          00047700
          00              END                                                                00047800

END ELT.  ERRORS: NONE. TIME:  0.403 SEC. IMAGE COUNT: 92

@HDG,P  ******  EMISS  ******
```

```
                      READ(IREAD,151) LGRID,XG(IG),YG(IG),GSIZE(IG),GVMT(IG),IGLOC(IG),
                     1GEMIS(IG)
                  151 FORMAT(3X,I3,4F10.0,1X,I1,E10.3)
                      IF(LGRID.NE.IG) GO TO 158
                      IF(XG(IG).LE.0.0.OR.YG(IG).LE.0.) GO TO 158
                      IF(GSIZE(IG).LE.0.) GO TO 158
                      IF(LNPATH.EQ.2) GO TO 152
                      IF(GVMT(IG).LE.0.) GO TO 158
                      IF(IGLOC(IG).LT.1.OR.IGLOC(IG).GT.5) GO TO 158
                      GO TO 153
                  152 IF(GEMIS(IG).LT.0.) GO TO 158
                      GO TO 153
                  158 WRITE(IWRI,159)
                  159 FORMAT(///,5X,30HERRONEOUS DATA ON CARD TYPE 7M)
                      ISTOP=1
                      WRITE(IWRI,107)
                  153 CONTINUE
                C
                C
                C     READ AND EDIT CARD TYPE 8
                C
                C
                  160 IF(MODRUN.EQ.2) GO TO 165
                C
                C     ANNUAL MODE
                      DO 163 K=1,6
                      DO 163 L=1,16
                      READ(IREAD,161) (FREQA(K,L,M),M=1,6)
                  161 FORMAT(3X,6F10.0)
                      DO 162 M=1,6
                      IF(FREQA(K,L,M).GE.0.0.AND.FREQA(K,L,M).LE.1.) GO TO 162
                      WRITE(IWRI,169)
                      ISTOP=1
                      WRITE(IWRI,107)
                  162 CONTINUE
                  163 CONTINUE
                      DO 1163 K=1,6
                      DO 1163 L=1,16
                      READ(IREAD,161) (FREQP(K,L,M),M=1,6)
                      DO 1162 M=1,6
                      IF(FREQP(K,L,M).GE.0.0.AND.FREQP(K,L,M).LE.1.) GO TO 1162
                      WRITE(IWRI,169)
                      ISTOP=1
                      WRITE(IWRI,107)
                  1162 CONTINUE
                  1163 CONTINUE
                      GO TO 170
                C
                C     SHORT-TERM MODE
                  165 READ(IREAD,166) WS,IWD,ISTAB
                  166 FORMAT(3X,F10.0,I3,1X,I1)
                      IF(WS.LT.1.) GO TO 168
                      IF(IWD.LT.0.OR.IWD.GT.360) GO TO 168
                      IF(ISTAB.LT.1.OR.ISTAB.GT.5) GO TO 168
                      GO TO 180
                  168 WRITE(IWRI,169)
                  169 FORMAT(///,5X,30HERRONEOUS DATA ON CARD TYPE 8M)
                      ISTOP=1
                      WRITE(IWRI,107)
                C
                C
                C     READ AND EDIT CARD TYPE 9
                C
                C
                  170 READ(IREAD,171) (NOPT1(I),I=1,5),(NOPT2(I),I=1,5),NOPT3,
                     1(NMET(I),I=1,10),IGRAF
```

*** G04 ***

```
*** G05 ***
$ELT,L CEM.MOBLE1
ELT 881 S7491C 04/23/82 15:45:09 (0)
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```
      1.          00        SUBROUTINE MOBLE1(IAMPM,INITFL,CY)
      2.          00  C                                                                    00000100
      3.          00  C                                                                   C0000400
      4.          00  C                                                                   C0000500
      5.          00  C              MOBILE1: MOBILE SOURCE EMISSIONS MODEL                C0000600
      6.          00  C                                                                   C0000700
      7.          00  C                                                                   C0000800
      8.          00  C**MAIN: MAIN ROUTINE FOR CALCULATING MOBILE SOURCE EMISSION FACTORS  00000200
      9.          00  C                                                                    00000300
     10.          00        COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
     11.          00        COMMON/PRE3/JCLDNA(5),JCLDCA(5),JHOTA(5),JCLDNP(5),JCLDCP(5),
     12.          00       1JHOTP(5),JCOLDN(5),JCOLDC(5),JHOT(5)
     13.          00        COMMON/PRE6/ILOOP
     14.          00        COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
     15.          00       1WRMCOR(20,6,3),ACFAC(2,20,3)
     16.          00        COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,  00000400
     17.          00       *          UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM               00003500
     18.          00        COMMON/REGCOM/IREJN                                            00000600
     19.          00        COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,MS                       00000700
     20.          00        COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC
     21.          00  C                                                                    00000900
     22.          00        INTEGER ALHFLG,TRKFLG,ALTFLG,ALTKOD(4,20),CY,SP3FLG,UNFFLG,    00004000
     23.          00       *   PRTFLG                                                     00004100
     24.          00        INTEGER CYOLD
     25.          00        REAL EFRETM(3,6),WTEDEF(3),LNKDTA(7),SPD(3),MS(6),COMCCC(6)    00001100
     26.          00        REAL IDLRTM(3,6),IDLWTD(3)                                     00001200
     27.          00        DIMENSION CFRET(20,3,6)
     28.          00  C                                                                    00001300
     29.          00        EQUIVALENCE (SPD(1),LNKDTA(1))                                 00001400
     30.          00  C                                                                    00001500
     31.          00        DATA CYOLD/0/
     32.          00        DATA IRJOLD/0/                                                 00001600
     33.          00  C     DATA INITFL/1/
     34.          00        IF(INITFL.EQ.0) GO TO 100
     35.          00  C                                                                    00001800
     36.          00  C*****************************************************************  00001900
     37.          00  C                                                                    00002000
     38.          00        CALL INPUT(INITFL,CY,ICYPR,RSPD)
     39.          00  C                                                                    00002200
     40.          00  C*****************************************************************  00002300
     41.          00  C                                                                    00002400
     42.          00        INITFL=0
     43.          00    100 CONTINUE
     44.          00  C                                                                    00002600
     45.          00        IF(ILOOP.EQ.1.OR.ILOOP.EQ.3) GO TO 1001
     46.          00        NITER=5
     47.          00        GO TO 1002
     48.          00   1001 NITER=12
     49.          00   1002 RSPD=0.
     50.          00        DO 1010 II=1,NITER
     51.          00        GO TO (1004,1005,1006,1007) ILOOP
     52.          00   1004 RSPD=RSPD+5.
     53.          00        GO TO 1015
     54.          00   1005 IF(II.EQ.1) RSPD=19.6
     55.          00        IF(JDUMY.EQ.2) GO TO 1008
     56.          00        INCC=JCLDNA(II)
     57.          00        ICH=JHOTA(II)
     58.          00        ICC=JCLDCA(II)
     59.          00        GO TO 1015
     60.          00   1008 INCC=JCLDNP(II)
     61.          00        ICH=JHOTP(II)
     62.          00        ICC=JCLDCP(II)
     63.          00        GO TO 1015
     64.          00   1006 RSPD=RSPD+5.
```

```
*** G06 ***                                                                                                    *** G06 ***
    65.          00      55   ECRID(IG,IP,1)=VMT*GRDFAC(1,LOC,IP)*IPCWH/(3.6E11*GSIZE(IG)**2)
    66.          00      60   CONTINUE
    67.          00           GO TO 100
    68.          00      C
    69.          00      C    CONVERT USER-SUPPLIED DAILY EMISSION RATE TO HOURLY EMISSION RATE
    70.          00       70  DO 80 IG=1,NGRID
    71.          00           DO 80 IP=2,2
    72.          00       80  EGRID(IG,IP,1)=GEMIS(IG)*IPCWH/3.6E5
    73.          00      100  CONTINUE
    74.          00           RETURN
    75.          00           END

END ELT.  ERRORS: NONE. TIME:  0.293 SEC. IMAGE COUNT: 75

@HDG,P  ******  OUTPUT  ******
```

```
   197.          00      C     (POLYNOMIAL APPROZIMATION)
   198.          00      C
   199.          00            Y(1)=YE+ELL2
   200.          00            Y(2)=Y(1)-EN2
   201.          00            Y(3)=Y(2)-EN2
   202.          00            Y(4)=Y(3)-2*EM2
   203.          00            Y(5)=Y(4)-EN2
   204.          00            Y(6)=Y(5)-EN2
   205.          00      C
   206.          00      C     SUBELEMENT SOURCE STRENGTH LOOP
   207.          00            DO 480 I=1,6
   208.          00            LIM=ABS(Y(I)/SGY)
   209.          00            T=1./(1.+0.23164*LIM)
   210.          00            ARG=LIM**2/(-2.)
   211.          00            IF(LIM.GT.5.) INTG(I)=0.
   212.          00            IF(LIM.LE.5.) INTG(I)=0.3989*EXP(ARG)*(0.3194*T-0.3566*T**2+
   213.          00           1.7815*T**3-1.8213*T**4+1.3303*T**5)
   214.          00       480  CONTINUE
   215.          00            DO 485 IP=2,2
   216.          00            DO 485 IAMPM=1,KTIME
   217.          00       485  FAC2(IAMPM,IP)=0.
   218.          00            DO 530 I=1,5
   219.          00      C     SET NORMAL PROBABILITY DENSITY FUNCTION
   220.          00            IF((SIGN(1.,Y(I))).EQ.(SIGN(1.,Y(I+1))))
   221.          00           1PD=ABS(INTG(I+1)-INTG(I))
   222.          00            IF((SIGN(1.,Y(I))).NE.(SIGN(1.,Y(I+1))))
   223.          00           1PD=1.-INTG(I)-INTG(I+1)
   224.          00            DO 520 IP=2,2
   225.          00            DO 520 IAMPM=1,KTIME
   226.          00       520  FAC2(IAMPM,IP)=FAC2(IAMPM,IP)+PD*QE(IAMPM,IP)*WT(I)
   227.          00       530  CONTINUE
   228.          00            DO 535 IP=2,2
   229.          00            DO 535 IAMPM=1,KTIME
   230.          00            FACT=FAC1*FAC2(IAMPM,IP)
   231.          00      C
   232.          00      C     INCREMENTAL CONCENTRATION FROM ELEMENT AND SUMMATION OF CONCEN-
   233.          00      C     TRATIONS
   234.          00            INC=FACT*2.
   235.          00       535  CON(IAMPM,IP)=CON(IAMPM,IP)+INC
   236.          00            IF(FINI.EQ.0.) GO TO 900
   237.          00       770  NE=NE+1.
   238.          00      C     THIS IS STEP FACTOR
   239.          00            STP=BASE**NE
   240.          00            IF(NE.EQ.0.) GO TO 80
   241.          00      C     INCREMENT TO NEXT ELEMENT
   242.          00            ED1=ED2
   243.          00            ED2=ED2+SGN*STP*WL
   244.          00            GO TO 110
   245.          00       830  IF(SGN.EQ.1.) GO TO 770
   246.          00      C
   247.          00      C     END OF CALINE3 ROUTINE
   248.          00       900  CONTINUE
   249.          00      C
   250.          00      C
   251.          00      C     UNITS OF SEMI-NORMALIZED CONCENTRATION C ARE G/M**2-SEC
   252.          00      C     IF MORE POLLUTANTS ARE TO BE INCLUDED, THE CONCENTRA-
   253.          00      C     TION MATRIX MUST BE REDONE TO STORE THE ADDITIONAL POLLUTANTS.
   254.          00      C     THE POLLUTANT DO LOOP IS IN PLACE, BUT THE CONCENTRATION MATRIX
   255.          00      C     IS SO LARGE ALREADY THAT WE DID NOT DIMENSION IT FOR MORE
   256.          00      C     POLLUTANTS, SINCE CO IS THE ONLY POLLUTANT BEING TREATED AT THE
   257.          00      C     PRESENT TIME.
   258.          00      C
   259.          00      C
   260.          00            DO 920 IP=2,2
   261.          00            DO 920 IAMPM=1,KTIME
   262.          00            IF(MODRUN.EQ.1) ISTWD=16*(JSTAB-1)+JWD
```

*** G07 ***

```
*** G08 ***                                                                    *** G08 ***
   263.          01                TOTCOM=TOTCOM+COMSUM(IC,IP,IAMPM)
   264.          01          140   TOTCMN=TOTCMN+CMNSUM(IC,IP,IAMPM)
   265.          01                DO 141 IC=1,10
   266.          01                COMSUM(IC,IP,IAMPM)=COMSUM(IC,IP,IAMPM)/TOTCOM*100.
   267.          01          141   CMNSUM(IC,IP,IAMPM)=CMNSUM(IC,IP,IAMPM)/TOTCMN
   268.          01                EXPSUM(IP,IAMPM)=EXPSUM(IP,IAMPM)/NPATHS
   269.          01          143   CONTINUE
   270.          01              C
   271.          01              C     COMPUTE AVERAGE NETWORK EXPOSURE
   272.          01                    RETURN
   273.          01                    END

END ELT.  ERRORS: NONE. TIME:  0.551 SEC. IMAGE COUNT: 273

$HDG,P  ******  STREET  ******
```

```
*** H01 ***                                                                                                    *** H01 ***
    65.          00          2EING SET EQUAL TO CAPACITY FOR THIS RUN.  CHECK INPUTS..)
    66.          00            VOLHR(N,L,M)=LINCAP(N,L)-1.0
    67.          00            GO TO 40
    68.          00         45 SPEED=32.-EXP(6.97*VC-4.13)
    69.          00            LSPEED=5*INT(SPEED/5.+0.5)
    70.          00            LINSPD(N,L,M)=LSPEED
    71.          00         50 EXDIST=CONVRT*SQRT((X1(N,L)-X2(N,L))**2+(Y1(N,L)-Y2(N,L))**2)
    72.          00            LSPEED=LINSPD(N,L,M)
    73.          00            HALF=EXDIST/6.
    74.          00            LINSPD(N,L,M)=LINSPD(N,L,M)/5-1
    75.          00            IF(K9.EQ.0) GO TO 2000
    76.          00            TT1(N,L,M9)=HALF*60./LSPEED
    77.          00            TT2(N,L,M9)=TT1(N,L,M9)
    78.          00          1000 CONTINUE
    79.          00            IF(M.EQ.2.OR.M.EQ.4) GO TO 2000
    80.          00            TT3=TT1(N,L,M9)
    81.          00            TT1(N,L,M9)=TT2(N,L,M9)
    82.          00            TT2(N,L,M9)=TT3
    83.          00          2000 CONTINUE
    84.          00        C
    85.          00        C
    86.          00        C
    87.          00            RETURN
    88.          00            END
END ELT.  ERRORS: NONE. TIME:  0.298 SEC. IMAGE COUNT: 88

@HDG,P  ******  BEFGEN  ******
```

```
   461.          00          *      17,25,27,31,35,38,40,43,44,45,49,50,50,53,54,54,55,56,58,   00184500
   462.          00          *      26,33,36,41,46,48,51,54,56,57,58,59,60,61,63,63,64,65,66,   00184600
   463.          00          *      30,41,47,50,54,57,59,61,63,65,65,66,67,68,69,70,71,71,71,   00184700
   464.          00          *      32,45,50,54,57,60,63,64,65,67,68,69,70,71,72,72,73,73,74,   00184800
   465.          00          *      33,47,52,56,60,62,65,67,68,69,70,71,72,73,74,74,75,75,76?   00184900
   466.          00            DATA DUM87
   467.          00          *       5,24,40,48,56,60,65,67,69,72,72,74,75,76,77,78,78,79,79,   00185000
   468.          00          *       8,27,42,51,58,63,66,69,71,73,74,76,76,77,78,79,79,80,80,   00185100
   469.          00          *      11,29,43,52,59,64,67,70,72,74,75,76,77,78,79,80,80,81,81,   00185200
   470.          00          *      13,30,43,55,59,64,68,71,73,75,76,77,78,79,80,80,81,82,82,   00185300
   471.          00          *      14,30,44,52,59,64,68,71,73,75,76,77,78,79,80,81,81,82,82,   00185400
   472.          00          *       9,30,41,56,58,68,68,71,74,77,77,78,79,81,81,81,81,82,83,   00185500
   473.          00          *      15,37,51,60,66,70,72,76,77,78,80,82,82,82,83,84,84,85,85,   00185600
   474.          00          *      18,39,52,62,68,71,74,77,78,79,82,82,83,84,84,84,85,86,86,   00185700
   475.          00          *      21,43,57,66,71,75,78,80,81,83,84,85,85,86,86,87,87,88,88,   00185800
   476.          00          *      23,44,58,66,72,76,79,81,83,84,85,86,86,87,88,88,88,89,89?   00185900
   477.          00      C                                                                      00186000
   478.          00            END                                                              00186100
```

END ELT. ERRORS: NONE. TIME: 1.230 SEC. IMAGE COUNT: 478

@HDG,P ****** BLKDAT1 ******

```
*** H03 ***                                                                                                                    *** H03 ***
@ELT,L CEM.EMISS
ELT 8R1 S7491C 04/23/82 15:44:53 (0)
     1.          00          SUBROUTINE EMISS
     2.          00     C
     3.          00     C
     4.          00     C    THIS SUBROUTINE COMPUTES THE EMISSION RATE ON EACH PATHWAY SEGMENT
     5.          00     C    USING THE EMISSION FACTORS COMPUTED BY THE PREPROCESSOR.  FTP
     6.          00     C    EMISSION FACTORS ARE USED FOR FREEWAY, EXPRESSWAY, OR NON-CBD
     7.          00     C    SEGMENTS WHILE MODAL EMISSION FACTORS ARE USED ON ALL CBD
     8.          00     C    SEGMENTS THAT ARE NOT FREEWAYS
     9.          00     C
    10.          00     C
    11.          00          COMMON/RUNTYP/MODRUN
    12.          00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
    13.          00         1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
    14.          00          COMMON/DEFINE/LPATH,LNPAT(4),NPATHS,NSEG(5),NGRID
    15.          00          COMMON/PAEMIS/EPATEA(5,20,4),ERATEP(5,20,4),W(5,20)
    16.          00          COMMON/EMSFAC/OUTFAC(2,11,3),GRDFAC(2,5,3),EMCRT(2,3,6),
    17.          00         1EMAD1(2,3,6),EMIDLE(3)
    18.          00          COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
    19.          00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
    20.          00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
    21.          00          COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
    22.          00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
    23.          00          COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
    24.          00          DO 500 IPATH=1,NPATHS
    25.          00          NSEGS=NSEG(IPATH)
    26.          00          DO 500 LINK=1,NSEGS
    27.          00     C
    28.          00     C    COMPUTE STREET WIDTH IN M AND LENGTH IN MI
    29.          00     C
    30.          00          W(IPATH,LINK)=(NLANE(IPATH,LINK,1)+NLANE(IPATH,LINK,2))*LANWID
    31.          00         1(IPATH,LINK)*.3048
    32.          00          IF(LPATH.EQ.2) GO TO 500
    33.          00          SEGL=SQRT((X1(IPATH,LINK)-X2(IPATH,LINK))**2+(Y1(IPATH,LINK)-Y2(I
    34.          00         1PATH,LINK))**2)
    35.          00          SEGL=SEGL*CONVRT
    36.          00          IF(MODRUN.EQ.2) GO TO 5
    37.          00     C
    38.          00     C    ANNUAL MODE
    39.          00     C
    40.          00          VOLAC=VOLHR(IPATH,LINK,1)
    41.          00          VOLAO=VOLHR(IPATH,LINK,2)
    42.          00          VOLPC=VOLHR(IPATH,LINK,4)
    43.          00          VOLPO=VOLHR(IPATH,LINK,3)
    44.          00          ISPDAC=LINSPD(IPATH,LINK,1)
    45.          00          ISPDAO=LINSPD(IPATH,LINK,2)
    46.          00          ISPDPC=LINSPD(IPATH,LINK,4)
    47.          00          ISPDPO=LINSPD(IPATH,LINK,3)
    48.          00          GO TO 8
    49.          00     C
    50.          00     C    SHORT-TERM MODE
    51.          00     C
    52.          00        5 VOLC=VOLHR(IPATH,LINK,1)
    53.          00          VOLO=VOLHR(IPATH,LINK,2)
    54.          00          ISPDC=LINSPD(IPATH,LINK,1)
    55.          00          ISPDO=LINSPD(IPATH,LINK,2)
    56.          00     C
    57.          00     C    CHECK WHICH TYPE OF EMISSION TREATMENT IS TO BE USED
    58.          00        8 IF(INTYPE(IPATH,LINK).EQ.2) GO TO 100
    59.          00          IF(MODRUN.EQ.2) GO TO 50
    60.          00     C
    61.          00     C
    62.          00     C    ANNUAL MODE
    63.          00     C
    64.          00     C
```

```
      171  FORMAT(3X,11I2,10I3,1X,I1)
           JOPT1=0
           JOPT2=0
           JOPT3=0
           DO 175 I=1,10
           IF(I.GT.5) GO TO 174
           IF(NOPT1(I).LE.0) GO TO 172
           JOPT1=JOPT1+1
           IF(NOPT1(I).GT.NPATHS) GO TO 178
      172  IF(NOPT2(I).LE.0) GO TO 174
           JOPT2=JOPT2+1
           IF(NOPT2(I).GT.NPATHS) GO TO 178
      174  IF(NMET(I).LE.0) GO TO 175
           JOPT3=JOPT3+1
           IF(NMET(I).GT.576) GO TO 178
      175  CONTINUE
           IF(JOPT3.LE.0) GO TO 180
           IF(NOPT3.GT.0.AND.NOPT3.LE.NPATHS) GO TO 180
      178  WRITE(IWRI,179)
      179  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 9M)
           ISTOP=1
           WRITE(IWRI,107)
C
C
C     READ OUTPUT OF EMISSION FACTOR PREPROCESSOR
C
C
       180  IF(ISTOP.EQ.1) STOP
            IF(MODRUN.EQ.2) GO TO 1184
C
C     MODEL IS IN ANNUAL MODE--READ EMISSION FACTORS FOR NON-CBD
C     PATHWAY VMT
            IF(LPATH.EQ.2) GO TO 1179
            DO 1177 IP=2,2
       1177 READ(IFILE,1178) ((OUTFAC(IAMPM,ISP,IP),ISP=1,11),IAMPM=1,2)
       1178 FORMAT(8F12.5)
C
C     MODEL IS IN ANNUAL MODE--READ EMISSION FACTORS FOR GRIDDED VMT
       1179 IF(LNPATH.EQ.2) GO TO 1182
            DO 1181 IP=2,2
       1181 READ(IFILE,1178) ((GRDFAC(IAMPM,IL,IP),IL=1,5),IAMPM=1,2)
C
C     MODEL IS IN ANNUAL MODE--READ EMISSION FACTORS FOR CBD PATHWAY VMT
       1182  IF(LPATH.EQ.2) GO TO 1195
            DO 1183 IP=2,2
       1183 READ(IFILE,1178) ((EMCR1(IAMPM,IP,ISP),EMAD1(IAMPM,IP,ISP),ISP=1,6
           1),IAMPM=1,2)
            GO TO 1190
C
C     MODEL IS IN SHORT-TERM MODE--READ EMISSION FACTORS FOR NON-CBD
C     PATHWAY VMT
       1184 IF(LPATH.EQ.2) GO TO 1186
            DO 1185 IP=2,2
       1185 READ(IFILE,1178) (OUTFAC(1,ISP,IP),ISP=1,11)
C
C     MODEL IS IN SHORT-TERM MODE--READ EMISSION FACTORS FOR GRIDDED VMT
       1186 IF(LNPATH.EQ.2) GO TO 1188
            DO 1187 IP=2,2
       1187 READ(IFILE,1178) (GRDFAC(1,IL,IP),IL=1,5)
C
C     MODEL IS IN SHORT-TERM MODE--READ EMISSION FACTORS FOR CBD
C     PATHWAY VMT
       1188 IF(LPATH.EQ.2) GO TO 1195
            DO 1189 IP=2,2
       1189 READ(IFILE,1178) (EMCR1(1,IP,ISP),EMAD1(1,IP,ISP),ISP=1,6)
C
```

```
00              GO TO 1015
00         1007 IF(II.EQ.1) RSPD=19.6
00              INCC=JCOLDN(II)
00              ICH=JHOT(II)
00              ICC=JCOLDC(II)
00         1015 CONTINUE
00        C                                                           00002800
00              CALL INPUT(INITFL,CY,ICYPR,RSPD)
00        C                                                           00003000
00        C     IF(IRDFLG.EQ.0) GO TO 99                              00003100
00        C                                                           00003200
00              IF(IREJN.NE.IRJOLD.OR.CYOLD.NE.CY)
00             *  CALL INITEX(CY)
00              IF(IMFLG.NE.1) GO TO 10
00              IF(IREJN.NE.IRJOLD.OR.CYOLD.NE.CY)
00             * CALL LDVIMX(CY)
00          10  CONTINUE
00        C                                                           00003500
00              CYOLD=CY
00              IRJOLD = IREJN                                        00003600
00        C                                                           00003700
00              CALL EFCALX(CY,LNKDTA,MS,EFRETM,WTEDEF,COMCCC,IDLRTM,IDLWTD,CFRET)       00
00        C                                                           00003900
00        C     CALL OUTPUT(ICYPR,EFRETM,WTEDEF,COMCCC,IDLRTM,IDLWTD) 00004000
00        C
00        C     TEMPORARILY STORE AM AND PM OR SINGLE COMMUTE COMPOSITE EMISSION
00        C     FACTORS FOR EACH SPEED AND POLLUTANT
00        C
00              DO 1110 IP=2,2
00              TOTEM(IAMPM,II,IP)=WTEDEF(IP)
00              IF(ILOOP.NE.1.AND.ILOOP.NE.3) GO TO 1110
00              IF(II.GT.6) GO TO 1110
00              IF(IAMPM.EQ.2) GO TO 1110
00        C
00        C     FOR ANNUAL MODE STORE AM RATIOS OF COMPOSITE TO LDV EMISSION
00        C     FACTORS FOR EACH POLLUTANT AND EACH SPEED.LE.30 FOR 100 PC WARM
00        C     OPERATION TO USE AS MODAL CORRECTION FACTORS
00        C
00              RATEM(IAMPM,II,IP)=WTEDEF(IP)/EFRETM(IP,1)
00        C
00        C     STORE LDV COLD START/TEMPERATURE/SPEED CORRECTION FACTORS BY MODEL
00        C     YEAR, SPEED, AND POLLUTANT FOR 100 PC WARM OPERATION (TEMPERATURE
00        C     DROPS OUT OF EQUATION) FOR USE IN COMPUTING MODAL CORRECTION
00        C      FACTORS
00        C
00              DO 1009 IMY=1,20
00         1009 WRMCOR(IMY,II,IP)=CFRET(IMY,IP,1)
00         1110 CONTINUE
00         1010 CONTINUE
00        C                                                           00004100
00        C     GO TO 100
00        C                                                           00004300
00        C***************************************************************00004400
00        C                                                           00004500
00        C99   CONTINUE
00        C                                                           00004700
00        C     DEBUG SUBCHK                                          00004800
00        C     STOP
00              RETURN
00              END                                                   00005000
```

END ELT. ERRORS: NONE. TIME: 0.375 SEC. IMAGE COUNT: 124

@HDG,P ****** MODE ******

```
@ELT,L CEM.OUTPUT
ELT 8R1 S7491C 04/23/82 15:45:16 (0)
      1.          00            SUBROUTINE OUTPUT(CY)
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE PRINTS AND SETS UP FILES OF THE EMISSION FACTOR
      5.          00      C     TABLES
      6.          00      C
      7.          00      C
      8.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,   00008400
      9.          00           *              UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM             00008500
     10.          00            COMMON/MODEM/EMAD1(2,4,6),EMCR1(2,4,6),EMIDLE(4)
     11.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,VMTMIX
     12.          00            COMMON/IMCOM/ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2
     13.          00            COMMON/REGCOM/IREJN
     14.          00            COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
     15.          00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     16.          00           1IACS
     17.          00            COMMON/PRE3/JCLDNA(5),JCLDCA(5),JHOTA(5),JCLDNP(5),JCLDCP(5),
     18.          00           1JHOTP(5),JCOLDN(5),JCOLDC(5),JHOT(5)
     19.          00            COMMON/PRE5/ICOLDN,ICOLDC,IHOTC
     20.          00            COMMON/PRE6/ILOOP
     21.          00            COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
     22.          00           1WRMCOR(20,6,3),ACFAC(2,20,3)
     23.          00            COMMON/MYMCOM/MYM,MYR,TF
     24.          00            DIMENSION REGN1(3),REGN2(3),YESNO(2),         VMTMIX(6),SPD(3),
     25.          00           1POL(5,4)
     26.          00            REAL MYM(20,6),MYR(20,6),TF(20,6)
     27.          00            DATA REGN1/4H49 S,4HCALI,4HHI A/
     28.          00            DATA REGN2/4HTATE,4HF   ,4HLT. /
     29.          00            DATA YESNO/4HNO  ,4HYES /
     30.          00            DATA IWRI,IFILE/6,8/
     31.          00            DATA IICS70/,IICH/100/
     32.          00            DATA POL/4HTOTA,4HL HY,4HDROC,4HARBO,4HNS  ,
     33.          00           1         4HCARB,4HON M,4HONOX,4HIDE ,4H    ,
     34.          00           2         4HNITR,4HOGEN,4H OXI,4HDES ,4H    ,
     35.          00           3         4HEXHA,4HUST ,4HHYDR,4HOCAR,4HBONS/
     36.          00            IF(ILOOP.EQ.1.OR.ILOOP.EQ.3) GO TO 1
     37.          00            IF(ILOOP.GE.5) GO TO 20
     38.          00            IF(LPATH.NE.2) GO TO 20
     39.          00      C
     40.          00      C
     41.          00      C     PRINT HEADING
     42.          00      C
     43.          00      C
     44.          00        1   WRITE(IWRI,10) (MHEAD(I),I=1,10)
     45.          00       10   FORMAT(1H1,2X,10A2,////////)
     46.          00      C
     47.          00      C
     48.          00      C     PRINT BASIC INFORMATION
     49.          00      C
     50.          00      C
     51.          00            WRITE(IWRI,13) CY,REGN1(IREJN),REGN2(IREJN),(VMTMIX(MX),MX=1,6),
     52.          00           1(TF(MX,1),MX=1,20)
     53.          00       13   FORMAT(16H  CAL. YEAR   19,I2,8X,44HVEH. TYPE   LDV  LDT1  LDT2
     54.          00           1HDG   HDD   MC,/,11H  REGION    ,2A4,17X,5(F5.3,1H/),F5.3,//,11H  L
     55.          00           2DV MODEL,/,10H  YEAR MIX,2X,9(F5.3,1H/),F5.3,/,13X,9(F5.3,1H/),
     56.          00           3F5.3,/)
     57.          00      C
     58.          00      C     PRINT I/M INFORMATION IF APPLICABLE
     59.          00      C
     60.          00            IF(IMFLG.EQ.1) WRITE(IWRI,11) ICYIM,ISTRIN,YESNO(IMTFLG+1)
     61.          00            IF(IMFLG.EQ.1) WRITE(IWRI,12) MODYR1,MODYR2
     62.          00       11   FORMAT(32H  LDV I/M PROGRAM STARTING IN 19,I2,19H, STRINGENCY LEVE
     63.          00           1L  ,I2,19H  MECH. TRAINING    ,A4)
     64.          00       12   FORMAT(49H  I/M PROG. BENEFITS APPLY ONLY TO MODEL YEARS 19,I2,
```

*** H06 ***

```
*** H07 ***                                                                    *** H07 ***
   263.          00              IF(MODRUN.EQ.2) ISTWD=1
   264.          00       920    C(IAMPM,ISTWD,IWS)=CON(IAMPM,IP)
   265.          00      C       END OF WIND SPEED LOOP
   266.          00       950    CONTINUE
   267.          00      C       END OF STABILITY LOOP
   268.          00       960    CONTINUE
   269.          00      C       END OF WIND DIRECTION LOOP
   270.          00       970    CONTINUE
   271.          00              RETURN
   272.          00              END

END ELT.  ERRORS: NONE. TIME:  0.503 SEC. IMAGE COUNT: 272

@HDG,P  ******  RUNTEST11  ******
```

```
*** H08 ***                                                                                                    *** H08 ***
@ELT,L CEM.STREET
ELT 8R1 S7401C 04/23/82 15:45:28 (0)
     1.          00            SUBROUTINE STREET(IPATH,LINK,TT)
     2.          00      C
     3.          00      C
     4.          00      C     THIS SUBROUTINE COMPUTES NORMALIZED EXPOSURES (ANNUAL MODE) OR
     5.          00      C     EXPOSURES (SHORT-TERM MODE) ON PATHWAY SEGMENTS THAT ARE LOCATED
     6.          00      C     IN STREET CANYONS
     7.          00      C
     8.          00      C
     9.          00            COMMON/RUNTYP/MODRUN
    10.          00            COMMON/METST/WS,IWD,ISTAB
    11.          00            COMMON/STRT/EXST(5,3,2)
    12.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
    13.          00            COMMON/PAEMIS/ERATEA(5,20,3),ERATEP(5,20,3),W(5,20)
    14.          00            DIMENSION TT(2)
    15.          00            DUM=3.5*(1./W(IPATH,LINK)+0.5)
    16.          00      C
    17.          00      C     ANNUAL MODE
    18.          00      C     UNITS OF EXPOSURE EXST ARE G/M**2
    19.          00            DO 100 IP=2,2
    20.          00            IF(MODRUN.EQ.2) GO TO 50
    21.          00            EXST(IPATH,IP,1)=EXST(IPATH,IP,1)+DUM*ERATEA(IPATH,LINK,IP)*TT(1)
    22.          00            EXST(IPATH,IP,2)=EXST(IPATH,IP,2)+DUM*ERATEP(IPATH,LINK,IP)*TT(2)
    23.          00            GO TO 100
    24.          00      C
    25.          00      C     SHORT-TERM MODE
    26.          00      C     UNITS OF EXPOSURE EXST ARE G-SEC/M**3
    27.          00       50   EXST(IPATH,IP,1)=EXST(IPATH,IP,1)+DUM*ERATEA(IPATH,LINK,IP)*TT(1)/
    28.          00           1(WS+0.5)
    29.          00      100  CONTINUE
    30.          00           RETURN
    31.          00           END
END ELT.  ERRORS: NONE. TIME:  0.221 SEC. IMAGE COUNT: 31

@HDG,P  ******  TAPEFILE3  ******
```

```
*** I01 ***
@ELT,L CEM.BEFGEN
ELT 8R1 S7401C 04/23/82 15:44:39 (0)
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```
      1.          00            SUBROUTINE BEFGEN(CY)                                                          00080600
      2.          00      C                                                                                    00080700
      3.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,                00092700
      4.          00           *              UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                          00092800
      5.          00            COMMON/REGCOM/IREJN                                                            00081000
      6.          00            COMMON/BEFCOM/BEF                                                              00081100
      7.          00            COMMON/BASECM/BASE3R                                                           00081200
      8.          00            COMMON/DELCOM/DEL3R                                                            00081300
      9.          00            COMMON/IDLBCM/IDLB3R                                                           00081400
     10.          00            COMMON/IDLDCM/IDEL3R                                                           00081500
     11.          00            COMMON/IDLCOM/IDLBEF                                                           00081600
     12.          00            COMMON/INDXCM/INDX3R                                                           00081700
     13.          00            COMMON/MYMCOM/MYM,MYR,TF                                                       00081800
     14.          00      C                                                                                    00081900
     15.          00            REAL BASE3R(10,3,18),DEL3R(10,3,18)
     16.          00            REAL IDLB3R(10,3,18),IDEL3R(10,3,18)
     17.          00            REAL BEF(20,1,18),IDLBEF(20,1,18)
     18.          00            REAL CUMMIL(20,6),MYM(20,6),MYR(20,6),TF(20,6),NONMTH(45,6)                    00094200
     19.          00      C                                                                                    00082700
     20.          00            INTEGER ALHFLG,TRKFLG,ALTFLG                ,CY,MSFLG,SP3FLG,                  00082800
     21.          00           *        NMHFLG,IDLFLG,UNFFLG,MYMRFG,PRTFLG                                     00094500
     22.          00            INTEGER INDX3R(30,3,18)
     23.          00            INTEGER MAXAGE(6)                                                              00083100
     24.          00      C                                                                                    00083200
     25.          00            DATA MAXAGE/6*19/
     26.          00            DATA NONMTH/                                                                   00083700
     27.          00           *            24*.95 , 21*.85 ,                                                  00083800
     28.          00           *            24*.95 , 21*.85 ,                                                  00083900
     29.          00           *            24*.95 ,  4*.95 , 17*.85 ,                                         00084000
     30.          00           *            24*.95 ,  8*.95 , 13*.85 ,                                         00084100
     31.          00           *            45*.98 ,                                                           00084200
     32.          00           *            45*.95                      /                                      00084300
     33.          00      C                                                                                    00084400
     34.          00      C*************************************************************************************00084500
     35.          00      C                                                                                    00095600
     36.          00      C*************************************************************************************00095700
     37.          00      C                                                                                    00095800
     38.          00            CALL GETCUM(CUMMIL)                                                            00095900
     39.          00      C                                                                                    00096000
     40.          00      C*************************************************                                     00096100
     41.          00      C                                                                                    00096200
     42.          00            DO 400 IMODE=1,6                                                               00086100
     43.          00      C                                                                                    00086200
     44.          00              MAX = MAXAGE(IMODE)                                                          00086300
     45.          00      C                                                                                    00086400
     46.          00            ICY=CY
     47.          00            DO 200 IP = 1,3                                                                00086600
     48.          00              IMY1=ICY-19                                                                  00086700
     49.          00              IMY13=ICY                                                                    00086800
     50.          00            ICYP=1
     51.          00      C                                                                                    00087000
     52.          00            DO 100 MY = IMY1,IMY13                                                         00087100
     53.          00              IMYP =  MY - 50                                                              00087200
     54.          00      C                                                                                    00087300
     55.          00              IAGE=ICY - MY                                                                00087400
     56.          00      C                                                                                    00087500
     57.          00            IF(IAGE.GT.MAX) IAGE = MAX                                                     00087600
     58.          00      C                                                                                    00087700
     59.          00              AGE = IAGE                                                                   00087800
     60.          00              IA2=ICY-MY+1                                                                 00087900
     61.          00              IA3=21-IA2                                                                   00088000
     62.          00      C                                                                                    00088100
     63.          00            IF(MY.LT.66) INDX=1                                                            00088200
     64.          00            IF(MY.GE.66) INDX=INDX3R(MY-65,IP,IMODE+(IREJN-1)*6)                           00088300
```

```
@ELT,L CEM.BLKDAT1
ELT 8R1 S74Q1C 04/23/82 15:44:44 (1)
      1.          00            BLOCK DATA
      2.          00            COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
      3.          00            COMMON/SPREAD/DIURN(3,2,2),SEASON(3,12)
      4.          00      C
      5.          00      C     VARIABLE DIURN CONTAINS THE PEAK PERCENTAGES OF ADT BY ROADWAY
      6.          00      C     TYPE, MORNING OR EVENING, AND INBOUND OR OUTBOUND DIRECTIONS.
      7.          00      C     NOTE THAT THE ARRAY IS INDEXED FROM LEFT TO RIGHT; THAT IS, THE
      8.          00      C     FIRST INDEX IS CYCLED, THEN THE SECOND, THEN THE THIRD.
      9.          00      C     HENCE, THE FIRST VALUE IN THE DATA STATEMENT IS FOR A FREEWAY,
     10.          00      C     A.M., INBOUND; THE SECOND IS FOR AN ARTERIAL, A.M., INBOUND.
     11.          00      C     THE FOURTH IS FOR A FREEWAY, P.M., INBOUND; THE FIFTH IS FOR AN
     12.          00      C     ARTERIAL, P.M., INBOUND.  THE SEVENTH IS FOR A FREEWAY, A.M.,
     13.          00      C     OUTBOUND, AND THE TENTH IS FOR A FREEWAY, P.M., OUTBOUND.
     14.          00      C
     15.          01            DATA DIURN/3*8.7,3*7.7,3*8.7,3*7.7/
     16.          01      C     DATA DIURN/17.5,10.3,6.1,5.9,7.9,7.7,4.9,8.6,3.6,18.1,8.9,9.5/
     17.          00            DATA SEASON/.87,.87,.87,.90,.90,.90,.96,.96,.96,.99,.99,
     18.          00           1.99,1.02,1.02,1.02,1.02,1.10,1.10,1.10,1.11,1.11,1.11,1.12,1.12,
     19.          00           21.12,1.01,1.01,1.01,1.01,.98,.98,.98,.96,.96,.96,.96,.96,.96/
     20.          00            DATA WSPD/1.0,2.54,4.32,6.86,9.53,10.92/
     21.          00            END

END ELT.  ERRORS: NONE. TIME:  0.215 SEC. IMAGE COUNT: 21

@HDG,P  ******  CCEVAX  ******
```

*** I02 ***

```
      00                IF(INTYPE(IPATH,LINK).EQ.1.OR.INTYPE(IPATH,LINK).EQ.3) GO TO 30
      00     C
      00     C      NON-CBD, FREEWAY, OR EXPRESSWAY SEGMENTS (NO BACKUP)
      00     C
      00                DO 15 IP=2,2
      00                ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDAC,IP)*VOLAC+OUTFAC(1,ISPDAO,
     1IP)*VOLAO)/5792400.
      00       15       ERATEP(IPATH,LINK,IP)=(OUTFAC(2,ISPDPC,IP)*VOLPC+OUTFAC(2,ISPDPO,
     1IP)*VOLPO)/5792400.
      00                GO TO 500
      00     C
      00     C      CONGESTED FLOW (FREEWAY BACKUP OR TOLL BOOTH)
      00     C
      00       30       DO 40 IP=2,2
      00                IF(INTYPE(IPATH,LINK).EQ.1) GO TO 31
      00     C
      00     C      FREEWAY BACKUP
      00                EXEMA=OUTFAC(1,4,IP)
      00                EXEMP=OUTFAC(2,4,IP)
      00                GO TO 33
      00     C
      00     C      TOLL BOOTH
      00       31       EXEMA=(EMIDLE(IP)*5792400.)/(8.*TOTBAK(IPATH,LINK,1))
      00                EXEMP=(EMIDLE(IP)*5792400.)/(8.*TOTBAK(IPATH,LINK,2))
      00       33       ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDAC,IP)*VOLAC+(EXEMA-OUTFAC(
     11,ISPDAC,IP))*TOTBAK(IPATH,LINK,1)*(DISBAK(IPATH,LINK,1)/SEGL)+
     2OUTFAC(1,ISPDAO,IP)*VOLAO)/5792400.
      00       40       ERATEP(IPATH,LINK,IP)=(OUTFAC(2,ISPDPC,IP)*VOLPC+(EXEMP-OUTFAC(
     12,ISPDPC,IP))*TOTBAK(IPATH,LINK,2)*(DISBAK(IPATH,LINK,2)/SEGL)+
     2OUTFAC(2,ISPDPO,IP)*VOLPO)/5792400.
      00                GO TO 500
      00     C
      00     C
      00     C      SHORT-TERM MODE
      00     C
      00     C
      00       50       IF(INTYPE(IPATH,LINK).EQ.1.OR.INTYPE(IPATH,LINK).EQ.3) GO TO 80
      00     C
      00     C      NON-CBD, FREEWAY, OR EXPRESSWAY SEGMENTS (NO BACKUP)
      00     C
      00                DO 55 IP=2,2
      00       55       ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDC,IP)*VOLC+OUTFAC(1,ISPDO,IP)
     1*VOLO)/5792400.
      00                GO TO 500
      00     C
      00     C      CONGESTED FLOW (FREEWAY BACKUP OR TOLL BOOTH)
      00     C
      00       80       DO 86 IP=2,2
      00                IF(INTYPE(IPATH,LINK).EQ.1) GO TO 81
      00     C
      00     C      FREEWAY BACKUP
      00                EXEM=OUTFAC(1,4,IP)
      00                GO TO 85
      00     C
      00     C      TOLL BOOTH
      00       81       EXEM=(EMIDLE(IP)*5792400.)/(8.*TOTBAK(IPATH,LINK,1))
      00       85       ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDC,IP)*VOLC+(EXEM-OUTFAC(1,
     11ISPDC,IP))*TOTBAK(IPATH,LINK,1)*(DISBAK(IPATH,LINK,1)/SEGL)+
     2OUTFAC(1,ISPDO,IP)*VOLO)/5792400.
      00       86       CONTINUE
      00                GO TO 500
      00     C
      00     C
      00     C      CBD NON-FREEWAY SEGMENTS (MODAL)
      00     C
```

*** I03 ***

```
00      C      READ IDLE EMISSION FACTOR FOR CBD PATHWAYS
00       1190 DO 1191 IP=2,3
00       1191 READ(IFILE,1178) EMIDLE(IP)
00      C
00      C
00      C      PRINT INPUT DATA
00      C
00      C
02       1195 WRITE(IWRI,181) (AMHEAD(I),I=1,10),(IDATE(I),I=1,3)
00        181  FORMAT(1H1,2X,10A2,//,2X,8HDATE IS ,3I2)
00             IF(NPRINT.EQ.2) GO TO 260
00             WRITE(IWRI,182) MODRUN,LPATH,LNPATH
00        182  FORMAT(2X,35HFLAG FOR MODE OF MODEL OPERATION IS,
00           1I2,/,2X,26HPATHWAY EMISSIONS FLAG IS,I2,/,2X,29HNON-PATHWAY EMISSI
00           2ONS FLAG IS,I2)
00             WRITE(IWRI,183) NPATHS,NGRID,CONVRT
00        183  FORMAT(2X,16HNO. OF PATHWAYS ,I2,/,2X,23HNO. OF GRID SQUARES IS ,
00           1I3,/,2X,25HMAP CONVERSION FACTOR IS ,E10.3,12H MI/MAP UNIT,////)
00             WRITE(IWRI,2182)
00        2182 FORMAT(24X,27HFOR SHORT-TERM MODE TRAFFIC DATA FOR MODELED COMMUTE
00           1 IS LISTED IN AM POSITION,//)
00             WRITE(IWRI,184)
00        184  FORMAT(50X,25HBASIC TRAFFIC INFORMATION)
00             WRITE(IWRI,185)
00        185  FORMAT(1H-,25X,7HVOLUMES,14X,4HDATA,10X,5HLANES,12X,5HSPEED,17X,
00           111HCOORDINATES,13X,9HINTERSECT)
00             WRITE(IWRI,186)
00        186  FORMAT(1H ,15X,27H-------------------------,1X,9H---------,
00           11X,19H-------------------,1X,13H-------------,1X,35H-------------
00           2-------------------,1X,9H---------)
00             WRITE(IWRI,187)
00        187  FORMAT(1H ,52HPATH LINK TYPE IN/AM  OUT/AM IN/PM  OUT/PM FORM SPRD
00           1,34H  IN  OUT WIDTH CAPCY IN OUT IN OUT,4X,2HX1,7X,2HY1,7X,2HX2,7X,
00           22HY2,4X,9HTYPE DATA,/)
00             DO 196 IP=1,NPATHS
00             NSEGS=NSEG(IP)
00             DO 195 IS=1,NSEGS
00             IF(LPATH.EQ.2) GO TO 191
00             WRITE(IWRI,190) IP,IS,LINTYP(IP,IS),(VOLHR(IP,IS,IM),IM=1,4),
00            1IVFORM(IP,IS),IVSPRD(IP,IS),(NLANE(IP,IS,IM),IM=1,2),LANWID(IP,IS)
00            2,LINCAP(IP,IS),(LINSPD(IP,IS,IM),IM=1,4),X1(IP,IS),Y1(IP,IS),
00            3X2(IP,IS),Y2(IP,IS),INTYPE(IP,IS),INTDAT(IP,IS)
00        190 FORMAT(1H ,1X,2(I2,3X),I2,1X,4F7.0,2(2X,I2,3X,I2),3X,I2,3X,I4,2(1X
00           1,I2,2X,I2),4(1X,F8.3),2X,I2,3X,I2)
00             GO TO 195
00        191 WRITE (IWRI,192) IP,IS,LINTYP(IP,IS),(VOLHR(IP,IS,IM),IM=1,4),
00            1IVFORM(IP,IS),IVSPRD(IP,IS),(NLANE(IP,IS,IM),IM=1,2),LANWID(IP,IS)
00            2,(LINSPD(IP,IS,IM),IM=1,4),X1(IP,IS),Y1(IP,IS),X2(IP,IS),Y2(IP,IS)
00            3,INTYPE(IP,IS),INTDAT(IP,IS)
00        192 FORMAT(1H ,1X,2(I2,3X),I2,1X,4F7.3,2(2X,I2,3X,I2),3X,I2,8X,
00           22(1X,I2,2X,I2),4(1X,F8.3),2X,I2,3X,I2)
00        195  CONTINUE
00        196  CONTINUE
00             IF(NINT.EQ.0) GO TO 210
00             WRITE(IWRI,2001)
00        2001 FORMAT(1H1,51X,24HINTERSECTION INFORMATION)
00             WRITE(IWRI,2002)
00        2002 FORMAT(1H-,36X,24HSIGNALIZED INTERSECTIONS,35X,15HFREEWAY BACKUPS)
00             WRITE(IWRI,2003)
00        2003 FORMAT(1H ,10X,75H----------------------------------------------
00           1----------------------------,1X,34H----------------------------------
00           2--)
00             WRITE(IWRI,2004)
00        2004 FORMAT(1H ,18X,10HCAPACITIES,20X,7HVOLUMES,13X,5HCYCLE,5X,5HGREEN,
00           15X,7HVOLUMES,4X,10HCAPACITIES,4X,5HTIMES,4X,5HTOLLS)
00             WRITE(IWRI,2005)
```

*** I04 ***

```
      1.            00            SUBROUTINE MODE(N,L,M,K9,M9)
      2.            00            COMMON/RUNTYP/MODRUN
      3.            00            COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
      4.            00           1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
      5.            00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
      6.            00            COMMON/GENRL/MHEAD(10),IDATE(2),CONVRT
      7.            00            COMMON/TRAFOT/ VOLHR(5,20,4), INSPD(5,20,4)
      8.            00            COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
      9.            00            COMMON/SIGNAL/R(4),GPH(5,20,4),
     10.            00           1ACAP(5,20,4),ADV(5,20,4)
     11.            00            COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     12.            00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTT(5,2)
     13.            00            COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     14.            00            COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     15.            00           1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     16.            00      C
     17.            00      C
     18.            00      C
     19.            00            IF(M.EQ.1.OR.M.EQ.3) M9=M/2+1
     20.            00            IF(IBOUND.EQ.2) M9=2
     21.            00            IF(LPATH.EQ.1) GO TO 5
     22.            00            LSPEED=5*INT(LINSPD(N,L,M)/5+0.5)
     23.            00            LINSPD(N,L,M)=LSPEED/5
     24.            00            IF(LSPEED.GT.5) GO TO 205
     25.            00            WRITE(6,15)
     26.            00          15 FORMAT('1X,98HWARNING.  NON-ZERO SPEED MUST BE INPUT WITH EMISSION
     27.            00           1S.  A VALUE OF 25 MPH IS ASSUMED FOR THIS RUN.)
     28.            00            LINSPD(N,L,M)=5
     29.            00            LSPEED=25
     30.            00            GO TO 205
     31.            00           5 IF(LINSPD(N,L,M).EQ.0.0) LINSPD(N,L,M)=25
     32.            00            LSPEED=LINSPD(N,L,M)
     33.            00            LINSPD(N,L,M)=INT(LINSPD(N,L,M)/5.+0.5)
     34.            00            IF(M.EQ.2.OR.M.EQ.4) GO TO 2000
     35.            00            IF(INTDAT(N,L).EQ.1) GO TO 130
     36.            00            DO 50 K=1,2
     37.            00            R(K)=0.
     38.            00            R(K+2)=0.
     39.            00           50 CONTINUE
     40.            00            NPH=2
     41.            00            SKIP=0.
     42.            00            DO 100 K=1,2
     43.            00            IF(ACAP(N,L,M+K-1).EQ.0.) GO TO 90
     44.            00            R(K)=ADV(N,L,M+K-1)/ACAP(N,L,M+K-1)
     45.            00            IF(R(K).NE.0.) GO TO 100
     46.            00           90 NPH=NPH-1
     47.            00          100 SKIP=SKIP+R(K)
     48.            00            SKIP=1.0-SKIP
     49.            00            IF (SKIP.GT.0.0) GO TO 110
     50.            00            GO TO 310
     51.            00          110 CYCL(N,L,M9)=(9.0*NPH+5.0)/SKIP
     52.            00            CYC=CYCL(N,L,M9)
     53.            00            SKIP=1.-SKIP
     54.            00            DO 125 K=1,2
     55.            00            IF(R(K).EQ.0.) GO TO 125
     56.            00            GPH(N,L,M9)=CYC*R(1)/SKIP-3.
     57.            00          125 CONTINUE
     58.            00          130 CONTINUE
     59.            00            CYC=CYCL(N,L,M9)
     60.            00            DO 150 K=1,2
     61.            00            IF(GPH(N,L,K).GE.0.) GO TO 150
     62.            00      C
     63.            00      C
     64.            00      C
```

```
     111H THROUGH 19,I2)
C
C    COME HERE IF NOT FIRST TIME THROUGH
C
 20  GO TO (21,31,41,51,61,61,101,101) ILOOP
C
C
C    MODEL IS IN ANNUAL MODE--PRINT AND CREATE FILE OF EMISSION FACTORS
C    FOR NON-CBD PATHWAY VMT
C
C
 21  WRITE(IWRI,22)
 22  FORMAT(////////,65H  COMPOSITE EMISSION FACTORS (GRAMS/MILE) FOR NO
1N-CBD PATHWAY VMT,////)
     WRITE(IWRI,23) ITEMPA,ITEMPP,IACAM,IACPM
 23  FORMAT(18H  AM TEMPERATURE  ,I3,4H (F),10X,16HPM TEMPERATURE  ,I3,
14H (F),/,23H  AM AIR CONDITIONING  ,I3,3H PC,6X,21HPM AIR COND!TIO
2NING  ,I3,3H PC)
     WRITE(IWRI,24)
 24  FORMAT(23H  100 PC WARM OPERATION,//)
     DO 29 IP=2,2
     WRITE(IWRI,225) (POL(JP,IP),JP=1,5)
225  FORMAT(28X,5A4)
     WRITE(IWRI,25)
 25  FORMAT(13H  SPEED (MPH),3X,18HAM EMISSION FACTOR,3X,18HPM EMISSION
1 FACTOR,/)
     DO 26 II=1,11
     JSPD=(II+1)*5
 26  WRITE(IWRI,27) JSPD,(TOTEM(I,II+1,IP),I=1,2)
 27  FORMAT(6X,I3,10X,1PE10.3,11X,E10.3)
     WRITE(IFILE,28) ((TOTEM(I1,I2,IP),I2=2,12),I1=1,2)
 28  FORMAT(8E12.5)
     WRITE(IWRI,229)
229  FORMAT(///)
 29  CONTINUE
     GO TO 100
C
C
C    MODEL IS IN ANNUAL MODE--PRINT AND CREATE FILE OF EMISSION FACTORS
C    FOR GRIDDED VMT
C
C
 31  WRITE(IWRI,32)
 32  FORMAT(1H1  ,57H  COMPOSITE EMISSION FACTORS (GRAMS/MILE) FOR GRID
1DED VMT,////)
     WRITE(IWRI,23) ITEMPA,ITEMPP,IACAM,IACPM
     WRITE(IWRI,34)
 34  FORMAT(18H  SPEED   19.6 MPH,//)
     DO 38 IP=2,2
     WRITE(IWRI,39) (POL(JP,IP),JP=1,5)
 39  FORMAT(39X,5A4)
     WRITE(IWRI,35)
 35  FORMAT(14X,18HAM START MODE (PC),26X,18HPM START MODE (PC),/,
18H  LOCALE,4X,4HCOLD,5X,4HCOLD,6X,3HHOT,4X,11HAM EMISSION,7X,4HCOL
2D,5X,4HCOLD,6X,3HHOT,4X,11HPM EMISSION,/,3X,4HTYPE,3X,8HCATALYST
3X,8HNON-CAT,2X,8HCATALYST,4X,6HFACTOR,7X,8HCATALYST,1X,8HNON-CAT
4,2X,8HCATALYST,4X,6HFACTOR,/)
     DO 36 II=1,5
 36  WRITE(IWRI,37) II,JCLDCA(II),JCLDNA(II),JHOTA(II),TOTEM(1,II,IP),
1JCLDCP(II),JCLDNP(II),JHOTP(II),TOTEM(2,II,IP)
 37  FORMAT(4X,I2,1X,3(6X,I3),5X,1PE10.3,2X,3(6X,I3),5X,E10.3)
     WRITE(IFILE,28) ((TOTEM(I1,I2,IP),I2=1,5),I1=1,2)
     WRITE(IWRI,229)
 38  CONTINUE
     GO TO 100
C
```

```
*** I07 ***                                                    *** I07 ***
@ELT,L CEM.RUNTEST11
ELT 8R1 S74Q1C 04/23/82 15:45:21 (0)
     1.          00     @ASG,CP TEST11.
     2.          00     @BRKPT PRINT$/TEST11
     3.          00     @ASG,CP FILE8.
     4.          00     @USE 8,FILE8.
     5.          00     @XQT CEM.PREPRS
     6.          00     @ADD CEMDATA.TAPEFILE3
     7.          00     @FREE FILE8.
     8.          00     @BRKPT PRINT$
     9.          00     @FREE TEST11.

END ELT.  ERRORS: NONE. TIME:  0.204 SEC. IMAGE COUNT: 9


@HDG,P  ******  RUNTEST18  ******
```

```
*** I08 ***                                                                    *** I08 ***
@ELT,L CEM.TAPEFILE3
ELT 8R1 S7491C 04/23/82 15:45:28 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
     1.          00     1P TEST11                    781215_1_1 1 1 0 0 0
     2.          00     3P   0  0  0  0 73 73  0   02.5  -2.5
     3.          00     4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
     4.          00     5P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.204 SEC. IMAGE COUNT: 4

@HDG,P  ******  TAPEFILE4  ******
```

```
    65.          00     C                                                                  00088400
    66.          00     C                                                                  00088600
    67.          00     C                                                                  00088700
    68.          00          VMTAGE=CUMMIL(IAGE+1,IMODE)*.0001
    69.          00     C                                                                  00088900
    70.          00          BEF(IA3,ICYP,IP+(IMODE-1)*3) =
    71.          00         *          BASE3R(INDX,IP,IMODE+(IREJN-1)*6) +                 00089100
    72.          00         *       VMTAGE*DEL3R(INDX,IP,IMODE+(IREJN-1)*6)               00089200
    73.          00          IDLBEF(IA3,ICYP,IP+(IMODE-1)*3) =
    74.          00         *          IDLB3R(INDX,IP,IMODE+(IREJN-1)*6) +                 00089400
    75.          00         *       VMTAGE*IDEL3R(INDX,IP,IMODE+(IREJN-1)*6)              00089500
    76.          00     C                                                                  00089600
    77.          00     100  CONTINUE                                                      00090500
    78.          00     200  CONTINUE                                                      00090600
    79.          00     300  CONTINUE                                                      00090700
    80.          00     400  CONTINUE                                                      00090800
    81.          00     C                                                                  00090900
    82.          00     C************************************                              00091000
    83.          00          J=1
    84.          00          DO 450 I=1,20                                                 00091200
    85.          00     C
    86.          00          DO 450 IM=1,6                                                 00091400
    87.          00          IF(NMHFLG.EQ.1)BEF(I,J,1+(IM-1)*3)=BEF(I,J,1+(IM-1)*3)*NONMTH
    88.          00         *(I+J-1,IM)
    89.          00     450  CONTINUE                                                      00091900
    90.          00
    91.          00     C                                                                  00092000
    92.          00     C    DEBUG SUBCHK                                                  00092100
    93.          00     C                                                                  00092200
    94.          00          RETURN                                                        00092300
    95.          00          END                                                           00092400

END ELT.  ERRORS: NONE. TIME:  0.356 SEC. IMAGE COUNT: 95

@HDG,P ****** BIGCFX ******
```

```
@ELT,L CEM.CCEVAX
ELT 8R1 S7491C 04/23/82 15:44:45 (0)
```

*** J02 ***

```
     1.          00                SUBROUTINE CCEVAX                                                    00097200
     2.          00      C                                                                              00097300
     3.          00                COMMON/CEVCOM/CCEVRT                                                 00097400
     4.          00                COMMON/REGCOM/IREJN                                                  00097500
     5.          00      C                                                                              00097600
     6.          00                INTEGER CY , MY                                                      00097700
     7.          00                REAL CCEV(45,6,3),CCEVRT(45,6)
     8.          00      C         DATA LDGSWD/17*.80,.77,.77,3*.74,2*.72,21*.55/                       00097900
     9.          00      C                                                                              00098000
    10.          00                DATA CCEV/12*6.63,5*3.33,3*2.53,7*1.76,2*0.60,16*0.15,               00098100
    11.          00               *          12*6.63,5*3.33,3*2.53,7*1.76,2*0.60,16*0.15,              00098200
    12.          00               *          17*7.70,11*2.53,10*0.60,16*0.15,                          00098300
    13.          00               *          17*7.70,13*2.00,15*0.30,
    14.          00               *          45*0.                                                     00098500
    15.          00               *          27*1.60,18*0.,
    16.          00               *                                                                    00098700
    17.          00               *          10*6.63,3*3.33,7*2.53,7*1.76,2*0.60,16*0.15,              00098800
    18.          00               *          10*6.63,3*3.33,7*2.53,7*1.76,2*0.60,16*0.15,              00098900
    19.          00               *          17*7.70,10*2.53,2*0.60,16*0.15                            00099000
    20.          00               *          17*7.70,7*2.00,2*1.19,3*0.87,16*0.30,
    21.          00               *          45*0.                                                     00099200
    22.          00               *          27*1.60,18*0.,
    23.          00               *                                                                    00099400
    24.          00               * 12*9.,5*4.52,3*3.44,6*2.39,1*1.76,2*.81,4*.2,12*.15,
    25.          00               * 12*9.,5*4.52,3*3.44,6*2.39,1*1.76,2*.81,4*.2,12*.15,
    26.          00               * 17*10.46,9*2.72,2.00,2.72,.81,4*.2,12*.15,
    27.          00               *17*10.46,16*2.72,12*0.30,
    28.          00               *          45*0.                                                     00099900
    29.          00               *          27*2.17,18*0.     /
    30.          00      C                                                                              00100100
    31.          00      C                                                                              00100200
    32.          00                DO 100 IMODE = 1,6                                                   00100300
    33.          00                DO 90 MY = 1,45                                                      00100400
    34.          00      C                                                                              00100500
    35.          00                CCEVRT(MY,IMODE) = CCEV(MY,IMODE,IREJN)                              00100600
    36.          00      C                                                                              00100700
    37.          00      90        CONTINUE                                                             00100800
    38.          00      100       CONTINUE                                                             00100900
    39.          00      C                                                                              00101000
    40.          00      C                                                                              00101100
    41.          00                RETURN                                                               00101200
    42.          00      C         DEBUG SUBCHK                                                         00101300
    43.          00                END                                                                  00101400

END ELT.  ERRORS: NONE. TIME:  0.275 SEC. IMAGE COUNT: 43

@HDG,P  ******  CEMAP  ******
```

```
   131.          00      100  IF(MODRUN.EQ.2) GO TO 150
   132.          00      C
   133.          00      C
   134.          00      C     ANNUAL MODE
   135.          00      C
   136.          00      C
   137.          00           DO 110 IP=2,2
   138.          00           EXCESA=0.
   139.          00           EXCESP=0.
   140.          00           IF(DISBAK(IPATH,LINK,1).EQ.0.) GO TO 107
   141.          00           EXCESA=(EMAD1(1,IP,ISPDAC)*Q(IPATH,LINK,1)/CYCL(IPATH,LINK,1)+
   142.          00          1EMIDLE(IP)*DEL(IPATH,LINK,1)*VOLAC*P(IPATH,LINK,1)/3600.)/
   143.          00          2DISBAK(IPATH,LINK,1)
   144.          00      107  IF(DISBAK(IPATH,LINK,2).EQ.0.) GO TO 108
   145.          00           EXCESP=(EMAD1(2,IP,ISPDPC)*Q(IPATH,LINK,2)/CYCL(IPATH,LINK,2)+
   146.          00          1EMIDLE(IP)*DEL(IPATH,LINK,2)*VOLPC*P(IPATH,LINK,2)/3600.)/
   147.          00          2DISBAK(IPATH,LINK,2)
   148.          00      108  CRUISA=EMCR1(1,IP,ISPDAC)*VOLAC/(ISPDAC*1609.344)
   149.          00           CRUISP=EMCR1(2,IP,ISPDPC)*VOLPC/(ISPDPC*1609.344)
   150.          00           ERATEA(IPATH,LINK,IP)=((EXCESA*QDIST(IPATH,LINK,1)+CRUISA*SEGL)/
   151.          00          1SEGL)+OUTFAC(1,ISPDAO,IP)*VOLAO /5792400.
   152.          00      110  ERATEP(IPATH,LINK,IP)=((EXCESP*QDIST(IPATH,LINK,2)+CRUISP*SEGL)/
   153.          00          1SEGL)+OUTFAC(2,ISPDPO,IP)*VOLPO /5792400.
   154.          00           GO TO 500
   155.          00      C
   156.          00      C
   157.          00      C     SHORT-TERM MODE
   158.          00      C
   159.          00      C
   160.          00      150  DO 160 IP=2,2
   161.          00           EXCESS=0.
   162.          00           IF(DISBAK(IPATH,LINK,1).EQ.0.) GO TO 157
   163.          00           EXCESS=(EMAD1(1,IP,ISPDC)*Q(IPATH,LINK,1)/CYCL(IPATH,LINK,1)+
   164.          00          1EMIDLE(IP)*DEL(IPATH,LINK,1)*VOLC*P(IPATH,LINK,1)/3600.)/
   165.          00          2DISBAK(IPATH,LINK,1)
   166.          00      157  CRUISE=EMCR1(1,IP,ISPDC)*VOLC/(ISPDC*1609.344)
   167.          00      160  ERATEA(IPATH,LINK,IP)=((EXCESS*QDIST(IPATH,LINK,1)+CRUISE*SEGL)/
   168.          00          1SEGL)+OUTFAC(1,ISPDO,IP)*VOLO/5792400.
   169.          00      500  CONTINUE
   170.          00           RETURN
   171.          00           END
```

END ELT. ERRORS: NONE. TIME: 0.392 SEC. IMAGE COUNT: 171

$HDG,P ****** FREE ******

```
      00        2005 FORMAT(1H ,10X,27H----------------------------1X,27H----------
     1----------,1X,9H---------,1X,9H---------,1X,11H----------,1X,
     212H----------,1X,9H---------,1X,7H-------)
      00             WRITE(IWRI,2006)
      00        2006 FORMAT(1H ,51HPATH LINK IN/AM  OPPOSE OUT/PM OPPOSE IN/AM  OPPOSE,
     157H OUT/PM  OPPOSE   IN    OUT  IN    OUT  IN     OUT   IN     OUT,
     220H    IN    OUT  IN OUT)
      00             DO 206 IP=1,NPATHS
      00             NSEGS=NSEG(IP)
      00             DO 205 IS=1,NSEGS
      00             IF(INTYPE(IP,IS).EQ.0) GO TO 205
      00             IF(INTYPE(IP,IS).EQ.3) GO TO 201
      00             IF(INTYPE(IP,IS).EQ.1) GO TO 203
      00             WRITE(IWRI,200) IP,IS,(ACAP(IP,IS,IM),IM=1,4),(ADV(IP,IS,IM),IM=1,
     14) (CYCL(IP,IS,IM),IM=1,2) ,(GPA(IP,IS,IM),IM=1,2)
      00         200 FORMAT(1H ,1X,I2,3X,I2,2X,8(F5.0,2X),4(F4.0,1X))
      00             GO TO 205
      00         201 WRITE(IWRI,202) IP,IS,(VOLBAK(IP,IS,IM),IM=1,2),
     1(CAPBAK(IP,IS,IM),IM=1,2),(BAKTIM(IP,IS,IM),IM=1,2)
      00         202 FORMAT(1H ,1X,2(I2,3X),7(5X,4(F5.0,1X),F4.0,1X,F4.0)
      00             GO TO 205
      00         203 WRITE(IWRI,204) IP,IS,(TOLLS(IP,IS,IM),IM=1,2)
      00         204 FORMAT(1H ,1X,2(I2,3X),110X,F3.0,1X,F3.0)
      00         205 CONTINUE
      00         206 CONTINUE
      00         210 IF(LPATH.EQ.2.AND.LNPATH.EQ.2) GO TO 225
      00             IF(MODRUN.EQ.2) GO TO 215
      00             WRITE(IWRI,211) IAMPC,IPMPC
      00         211 FORMAT(1H1,1X,I3,53H PC OF NON-PATHWAY ADT DURING AVERAGE AM COMMU
     1TE HOUR,/,2X,I3,53H PC OF NON-PATHWAY ADT DURING AVERAGE PM COMMUT
     2E HOUR,/////)
      00             GO TO 220
      00         215 WRITE(IWRI,216) IPCWH
      00         216 FORMAT(1H1,2X,I3,48H PC OF NON-PATHWAY ADT DURING WORST COMMUTE HO
     1UR /////)
      00         220 IF(LNPATH.EQ.2) GO TO 225
      00             WRITE(IWRI,221)
      00         221 FORMAT(18X,18HRATIO OF SECONDARY,/,2X,11HLOCALE TYPE,7X,14HTO PRIM
     1ARY VMT ,/)
      00             DO 223 I=1,5
      00         223 WRITE(IWRI,222) I,RATSEC(I)
      00         222 FORMAT(6X,I2,16X,F5.3)
      00         225 WRITE(IWRI,226)
      00         226 FORMAT(1H1,17X,23HGRID SQUARE INFORMATION,///,2X,4HGRID,6X,2HXC,
     110X,2HYG,9X,5HGSIZE,7X,4HGVMT,5X,5HIGLOC,4X,5HGEMIS,/)
      00             DO 230 I=1,NGRID
      00             IF(LNPATH.EQ.2) GO TO 228
      00             WRITE(IWRI,227) I,XG(I),YG(I),GSIZE(I),GVMT(I),IGLOC(I)
      00         227 FORMAT(3X,I3,3(2X,F10.3),2X,E10.3,3X,I2)
      00             GO TO 230
      00         228 WRITE(IWRI,229) I,XG(I),YG(I),GSIZE(I),GEMIS(I)
      00         229 FORMAT(3X,I3,3(2X,F10.3),21X,E10.3)
      00         230 CONTINUE
      00             IF(MODRUN.EQ.2) GO TO 250
      00             DO 249 IAMPM=1,2
      00             WRITE(IWRI,235) AMPM(IAMPM)
      00         235 FORMAT(////////,35X,A2,1X,28HJOINT FREQUENCY DISTRIBUTION)
      00             DO 246 IST=1,6
      00             WRITE(IWRI,240) IST
      00         240 FORMAT(////,45X,10HSTABILITY ,I2,///,2X,9HWIND DIR.,32X,16HWIND SP
     1EED CLASS,/,4X,5HCLASS,11X,2H 1,10X,2H 2,10X,2H 3,10X,2H 4,10X,2H
     25,10X,2H 6,/)
      00             DO 245 IWD=1,16
      00             IF(IAMPM.EQ.2) GO TO 242
      00             WRITE(IWRI,241) IWD,(FREQA(IST,IWD,IWS),IWS=1,6)
      00             GO TO 245
```

*** J04 ***

```
     65.            00          WRITE(6,500) N,L,K
     66.            00      C
     67.            00      C
     68.            00      C
     69.            00          GPH(N,L,M9)=CYC
     70.            00        500 FORMAT( 1X,40HWARNING. NEGATIVE GREEN PHASE ON PATHWAY,I4,6H PHASE
     71.            00       1,I4,//,1X,46HPHASE LENGTH SET TO CYCLE LENGTH FOR THIS RUN.)
     72.            00        150 CONTINUE
     73.            00          IF(GPH(N,L,M9).EQ.0.) GO TO 200
     74.            00      C     P IS THE PROPORTION OF VEHICLES THAT STOP.
     75.            00          P(N,L,M9)=(1-GPH(N,L,M9)/CYC)/(1-(ADV(N,L,M)/ACAP(N,L,M)))
     76.            00      C     C IS THE CAPACITY OF THE APPROACH UNDER SIGNALIZATION.
     77.            00          C=ACAP(N,L,M)*GPH(N,L,M9)/CYC
     78.            00      C     Q IS THE QUEUE LENGTH FOR EACH SIGNAL CYCLE.
     79.            00          QU=P(N,L,M9)*ADV(N,L,M)*CYC/3600.+ADV(N,L,M)/(C-ADV(N,L,M))
     80.            00          Q(N,L,M9)=QU
     81.            00      C     D IS THE AVERAGE DELAY IN SECONDS FOR ALL VEHICLES.
     82.            00          D=0.5*P(N,L,M9)*(CYC-GPH(N,L,M9))+3600.*ADV(N,L,M)/(C*(C-
     83.            00         1ADV(N,L,M)))
     84.            00          DEL(N,L,M9)=D
     85.            00        200 CONTINUE
     86.            00        205 EXDIST=CONVRT*SQRT((X1(N,L)-X2(N,L))**2+(Y1(N,L)-Y2(N,L))**2)
     87.            00          HALF=EXDIST/2.
     88.            00          TT1(N,L,M9)=HALF*60./LSPEED
     89.            00          TT2(N,L,M9)=TT1(N,L,M9)
     90.            00          IF(LPATH.EQ.2) GO TO 1000
     91.            00          QDIS=QU*26.25/5280.
     92.            00          QDIST(N,L,M9)=QU*8.
     93.            00          ADVOL=ADV(N,L,M)
     94.            00          DELAY=DEL(N,L,M9)
     95.            00          DELAY=DELAY/60.
     96.            00          IF(QDIS.GE.HALF) GO TO 210
     97.            00          TT1(N,L,M9)=DELAY+(HALF-QDIS)*60./LSPEED
     98.            00          TT2(N,L,M9)=HALF*60./LSPEED
     99.            00          GO TO 1000
    100.            00        210 IF(QDIS.GE.EXDIST) GO TO 220
    101.            00          TT1(N,L,M9)=(HALF/QDIS)*DELAY
    102.            00          TT2(N,L,M9)=(EXDIST-QDIS)*60./LSPEED+DELAY*(QDIS-HALF)/QDIS
    103.            00          GO TO 1000
    104.            00        220 TT1(N,L,M9)=DELAY/2.
    105.            00          TT2(N,L,M9)=TT1(N,L,M9)
    106.            00          GO TO 1000
    107.            00      C
    108.            00      C
    109.            00      C
    110.            00        310 WRITE(6,550) N,L
    111.            00        550 FORMAT( 1X,13HERROR ON PATH,I3,5HLINK ,I2,
    112.            00       123HDEMAND EXCEEDS CAPACITY)
    113.            00       1000 CONTINUE
    114.            00          IF(M.EQ.3.OR.IBOUND.EQ.2) GO TO 2000
    115.            00          TT3=TT1(N,L,M9)
    116.            00          TT1(N,L,M9)=TT2(N,L,M9)
    117.            00          TT2(N,L,M9)=TT3
    118.            00       2000 CONTINUE
    119.            00      C
    120.            00      C
    121.            00      C
    122.            00          RETURN
    123.            00          END
END ELT.  ERRORS: NONE. TIME:  0.317 SEC. IMAGE COUNT: 123

$HDG,P  ******  MODMOD  ******
```

```
                00      C
                00      C       MODEL IS IN SHORT-TERM MODE--PRINT AND CREATE FILE OF EMISSION
                00      C       FACTORS FOR NON-CBD PATHWAY VMT
                00      C
                00      C
                00      C
                00       41     WRITE(IWRI,22)
                00              WRITE(IWRI,42) ITEMPS,IACS
                00       42     FORMAT(15H  TEMPERATURE  ,I3,4H (F),/,20H  AIR CONDITIONING  ,I3,
                00             13H PC)
                00              WRITE(IWRI,24)
                00              DO 46 IP=2,2
                00              WRITE(IWRI,47) (POL(JP,IP),JP=1,5)
                00       47     FORMAT(19X,5A4)
                00              WRITE(IWRI,43)
                00       43     FORMAT(13H  SPEED (MPH),6X,15HEMISSION FACTOR,/)
                00              DO 44 II=1,11
                00              JSPD=(II+1)*5
                00       44     WRITE(IWRI,45) JSPD,TOTEM(1,II+1,IP)
                00       45     FORMAT(6X,I3,9X,1PE10.3)
                00              WRITE(IFILE,28) (TOTEM(1,II,IP),II=2,12)
                00              WRITE(IWRI,229)
                00       46     CONTINUE
                00              GO TO 100
                00      C
                00      C
                00      C       MODEL IS IN SHORT-TERM MODE--PRINT AND CREATE FILE OF EMISSION
                00      C       FACTORS FOR GRIDDED VMT
                00      C
                00      C
                00       51     WRITE(IWRI,32)
                00              WRITE(IWRI,42) ITEMPS,IACS
                00              WRITE(IWRI,34)
                00              DO 55 IP=2,2
                00              WRITE(IWRI,56) (POL(JP,IP),JP=1,5)
                00       56     FORMAT(17X,5A4)
                00              WRITE(IWRI,52)
                00       52     FORMAT(16X,15HSTART MODE (PC),/,8H  LOCALE,4X,4HCOLD,5X,4HCOLD,6X,
                00             13HHOT,5X,8HEMISSION,/,4X,4HTYPE,3X,8HCATALYST,1X,8HNON-CAT.,1X,
                00             28HCATALYST,4X,6HFACTOR,/)
                00              DO 53 II=1,5
                00       53     WRITE(IWRI,54) II,JCOLDC(II),JCOLDN(II),JHOT(II),TOTEM(1,II,IP)
                00       54     FORMAT(4X,I2,1X,3(6X,I3),5Y,1PE10.3)
                00              WRITE(IFILE,28) (TOTEM(1,II,IP),II=1,5)
                00              WRITE(IWRI,229)
                00       55     CONTINUE
                00              GO TO 100
                00      C
                00      C
                00      C       PRINT TEMPERATURE/COLD STARTS CORRECTION FACTORS FOR CBD PATHWAY
                00      C       MODAL EMISSIONS
                00      C
                00      C
                00       61     WRITE(IWRI,62)
                00       62     FORMAT(/////,83H  TEMPERATURE/COLD STARTS CORRECTION FACTORS FOR C
                00             1BD PATHWAY MODAL EMISSION FACTORS,/)
                00              IF(ILOOP.EQ.5) GO TO 63
                00      C       SHORT-TERM MODE
                00              WRITE(IWRI,64) ITEMPS,IACS
                00              GO TO 67
                00      C       ANNUAL MODE
                00       63     WRITE(IWRI,77)
                00              WRITE(IWRI,64) ITEMPP,IACPM
                00       67     WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
                00              DO 660 IP=2,2
                00              IPP=IP
                00              IF(IP.EQ.1) IPP=4
```

*** J06 ***

```
@ELT,L CEM.RUNTEST18
ELT 8R1 S74Q1C 04/23/82 15:45:22 (4)
     1.          02     @RUN 12RHA,6402R0668Z/RHA,CO
     2.          03     @PASSWD KS
     3.          04     @ASG,A TEST18.
     4.          00     @BRKPT PRINT$/TEST18
     5.          00     @ASG,A FILE8.
     6.          00     @USE 8,FILE8.
     7.          00     @XQT CEM.CEMAP
     8.          01     @ADD CEMDATA.TEMPFILE5
     9.          00     @FREE FILE8.
    10.          00     @BRKPT PRINT$
    11.          00     @FREE TEST18.
    12.          02     @FIN

END ELT.  ERRORS: NONE. TIME:  0.205 SEC. IMAGE COUNT: 12

@HDG,P  ******  RUNTEST22  ******
```

```
@ELT,L CEM.TAPEFILE4
ELT 8R1 S7491C 04/23/82 15:45:29 (0)
 SI IS NOT SIR TYPE SDF *F##(######
```

1.	00	.10523E+03	.71793E+02	.55383E+02	.44885E+02	.37218E+02	.31698E+02	.28174
2.	00	.25845E+02	.25169E+02	.22672E+02	.10523E+03	.71793E+02	.55383E+02	.44885
3.	00	.31698E+02	.28174E+02	.26414E+02	.25845E+02	.25169E+02	.22672E+02	
4.	00	.62309E+02	.62309E+02	.62309E+02	.62309E+02	.62309E+02	.62309E+02	.62309
5.	00	.62309E+02	.62309E+02					
6.	00	.43407E+00	.87270E+00	.40819E+00	.23420E+01	.36967E+00	.38447E+01	.33552
7.	00	.31476E+00	.72162E+01	.30921E+00	.94161E+01	.43407E+00	.87270E+00	.40819
8.	00	.36967E+00	.38447E+01	.33552E+00	.54163E+01	.31476E+00	.72162E+01	.30921
9.	00	.24127E+02						

```
END ELT.  ERRORS: NONE. TIME:  0.207 SEC. IMAGE COUNT: 9

@HDG,P  ******  TAPEFILE5  ******
```

```
@ELT,L CEM.BIGCFX
ELT 8R1 S7491C 04/23/82 15:44:40 (Q)
      1.          00            SUBROUTINE BIGCFX(CY,T,PCCO,PCHS,PCCC,SPD,CFRET)                                  00047900
      2.          00      C                                                                                       00048000
      3.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,                   00048100
      4.          00           *              UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                            00057800
      5.          00            COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC                       00048200
      6.          00            COMMON/REGCOM/IREJN                                                               00048400
      7.          00            COMMON/JUNK1/AC,XLOAD,TRAILR,ABSHUM                                               00048500
      8.          00            COMMON/JUNK2/HGWGT,HDWGT,HGCID,HDCID                                              00048600
      9.          00            COMMON/RET1/ALHRET(20,4,3)                                                        00048700
     10.          00            COMMON/RET2/TRKRET(20,3,2)                                                        00048800
     11.          00            COMMON/SP1COM/SP1,SPAV                                                            00058500
     12.          00            COMMON/MYMCOM/MYM,MYR,TF                                                          00058600
     13.          00      C                                                                                       00048900
     14.          00            INTEGER ALHFLG,TRKFLG,ALTFLG,ALTKOD(4,20),CY,SP3FLG,                              00058800
     15.          00           *        NMHFLG,IDLFLG,UNFFLG,MYMRFG,PRTFLG                                       00058900
     16.          00            INTEGER INITFL,IEQNAR(45,3,12),HDINDX(45,3)                                       00049200
     17.          00            INTEGER   G(45,3,4)                                                               00049300
     18.          00      C IN G, 1ST INDEX IS MY, 2ND IS REGION, AND 3RD IS MODE                                 00049400
     19.          00      C IN IEQNAR, 2ND INDEX IS POLLUTANT, 3RD IS REGION, 4TH IS MODE                         00049500
     20.          00      C IN HDINDX, 2ND INDEX IS REGION (NOT FUNCTION OF POL. OR MODE)                         00049600
     21.          00      C                                                                                       00049700
     22.          00      C     REAL A(20,3,3),U(20,3,3),                                                         00059600
     23.          00      C    *  L(3,3),M(3)                                                                    00049900
     24.          00            REAL XLOAD(3)                                                                     00050000
     25.          00            REAL COMPEF(20,3,6)                                                               00050100
     26.          00            REAL T,SPD(3),SPB(3),CFRET(20,3,6)                                                00059900
     27.          00            REAL D1(4,3),D2(4,3)                                                              00050300
     28.          00            REAL MIDDLE,LEFT                                                                  00050400
     29.          00            REAL SPBACK(18,3,3),SPBOT(18,3,3)                                                 00050500
     30.          00            REAL ATR(4,3,2),BTR(4,3,2),CTR(4,3,2)                                             00050600
     31.          00            REAL C(4,8,3)                                                                     00050700
     32.          00            REAL CUMMIC(20,6),MYM(20,6),MYR(20,6),TF(20,6)                                    00060500
     33.          00            INTEGER MAXAGE(4)                                                                 00060600
     34.          00      C                                                                                       00060700
     35.          00            DATA MAXAGE/19,19,19,19/                                                          00060800
     36.          00      C*****************************************************************************************00050800
     37.          00            DATA INITFL/1/                                                                    00050900
     38.          00      C                                                                                       00051000
     39.          00      C**COEFFICIENTS IN SPEED/TEMP/COLD START FACTOR: EQN,INDEX,POL.                         00051100
     40.          00            DATA C/                                                                           00061400
     41.          00           *  2.931000, 2.931000, 2.433900, 1.993400,                                         00061500
     42.          00           *  -0.014779,-0.014779,-0.023591,-0.022269,                                        00061600
     43.          00           *   0.673,-2.410, 0.623,-0.032, 0.569, 0.863, 0.301, 0.445,                        00061700
     44.          00           *   4.750, 2.430, 1.110, 0.497, 0.393, 0.555, 0.284, 0.357,                        00061800
     45.          00           *   5.690, 2.610, 1.050, 0.243, 0.471, 0.597, 0.270, 0.175,                        00061900
     46.          00           *   5.654800, 5.654800, 5.546000, 4.239100,                                        00062000
     47.          00           *  -0.015965,-0.015965,-0.028945,-0.017522,                                        00062100
     48.          00           *  -14.74,-33.89, 11.29, -0.20, -0.62,  0.77,                                      00062200
     49.          00           *    4.24,  6.99, 42.84, 25.26, 15.85,  4.12,                                      00062300
     50.          00           *    5.76,  4.71,  2.34,  2.20, 57.57, 35.90,                                      00062400
     51.          00           *   21.17,  3.96,  7.74,  6.70,  3.13,  2.12,                                      00062500
     52.          00           *  -0.10E+03,-0.10E+03,-0.10E+03,-0.10E+03,                                        00062600
     53.          00           *   0.0  , 0.0  , 0.0  , 0.0  , 1.140, 1.160,                                      00062700
     54.          00           *   3.260, 3.050, 0.0  , 0.0  , 0.335, 0.318,                                      00062800
     55.          00           *   1.250, 1.260, 2.990, 2.880, 0.0  , 0.0  ,                                      00062900
     56.          00           *   0.184, 0.180, 0.810, 0.800, 1.890, 2.010,                                      00063000
     57.          00           *   0.0  , 0.0  , 0.116, 0.126  /                                                  00063100
     58.          00      C                                                                                       00063200
     59.          00      C**COEFFICIENTS IN DENOMINATOR OF SPEED/TEMP/COLD START FACTOR                          00063300
     60.          00            DATA D1/5.67,2.8,1.38,.54,56.43,36.4,23.7,6.98,1.,1.,2.47,2.46/                   00063400
     61.          00            DATA D2/.47,.64,.28,.28,7.59,6.79,3.14,3.14,0.,0.,.18,.18/                        00063500
     62.          00      C                                                                                       00063600
     63.          00      C**SPEED CORRECTION FACTOR INDEX: CAL, YR, REGION, MODE                                 00063700
     64.          00            DATA G/15*2, 2, 2, 4, 5, 6, 7,14,17,17,18,18,18,18*18,                            00063800
```

*** KO1 ***

```
@ELT,L CEM.CEMAP
ELT 8R1 S7401C 04/23/82 15:44:46 (2)
     1.          00     C       PROGRAM CEMAP (INPUT,OUTPUT,TAPE5=INPUT,TAPE6=OUTPUT,TAPE8)
     2.          00     C
     3.          00     C
     4.          00     C       THIS PROGRAM COMPUTES VARIOUS STATISTICS DESCRIBING THE EXPOSURE
     5.          00     C       OF COMMUTERS TO AIR POLLUTANTS.  IT WILL COMPUTE EXPOSURE ON AN
     6.          00     C       ANNUAL AVERAGE OR SHORT-TERM, WORST-CASE BASIS.
     7.          00     C       THE PROGRAM WAS DESIGNED AND WRITTEN BY P.B. SIMMON AND
     8.          00     C       R.M. PATTERSON AT SRI INTERNATIONAL, MENLO PARK, CA, UNDER THE
     9.          00     C       SPONSORSHIP OF THE ENVIRONMENTAL PROTECTION AGENCY, W.B. PETERSEN,
    10.          00     C       PROJECT OFFICER
    11.          00     C
    12.          00     C
    13.          00             COMMON/RUNTYP/MODRUN
    14.          00             COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
    15.          00            1JOPT3
    16.          00             COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
    17.          00     C
    18.          00     C
    19.          00     C       READ INPUT DATA
    20.          00     C
    21.          00             CALL INDATA
    22.          00     C
    23.          00     C
    24.          00     C       MAKE TRAFFIC COMPUTATIONS
    25.          00             CALL TRAF
    26.          00     C
    27.          00     C
    28.          00     C       MAKE EMISSION RATE COMPUTATIONS FOR PATHWAYS AND FOR NON-PATHWAY
    29.          00     C       SOURCES
    30.          00     C
    31.          00             CALL EMISS
    32.          00             CALL NPATHE
    33.          00     C
    34.          00     C
    35.          00     C       MAKE DISPERSION COMPUTATIONS
    36.          00     C
    37.          00             CALL DISPRS
    38.          00     C
    39.          00     C
    40.          00     C       COMPUTE AND PRINT MODEL OUTPUT STATISTICS
    41.          00     C
    42.          00             IF(MODRUN.EQ.2) GO TO 10
    43.          00     C
    44.          00     C       ANNUAL MODE
    45.          00             CALL STATIS
    46.          00             CALL ANNOUT
    47.          00             GO TO 20
    48.          00     C
    49.          00     C       SHORT-TERM MODE
    50.          00      10     CALL SHORTY
    51.          00     C
    52.          00     C
    53.          00     C       CREATE GRAPHICAL OUTPUT, IF CALLED FOR
    54.          00     C
    55.          00      20     IF(IGRAF.NE.1) GO TO 30
    56.          00             CALL GRAF
    57.          00      30     CONTINUE
    58.          00             END

END ELT.  ERRORS: NONE. TIME:  0.232 SEC. IMAGE COUNT: 58

@HDG,P  ******  COMPILE  ******
```

```
@ELT,L CEM.FREE
ELT 8R1 S74Q1C 04/23/82 15:44:54 (2)
     1.          00          SUBROUTINE FREE(N,L,M,K9,M9)
     2.          00      C   THIS SUBROUTINE TREATS FREEWAY TRAFFIC.  VARIABLE IVSPRD ASSUMES
     3.          00      C   VALUES OF -1.0, OR +1 DEPENDING ON WHETHER THE TRAFFIC DATA ARE
     4.          00      C   GIVEN AS ADT,HOURLY VALUES, OR AADT,RESPECTIVELY.  FREE COMPUTES
     5.          00      C   HOURLY VOLUMES AND SPEEDS,IF NECESSARY, AND IT COMPUTES TRAVEL
     6.          00      C   DISTANCE, TRAVEL TIME, AND A SPEED CLASS FOR EACH FREEWAY LINK.
     7.          00          COMMON/RUNTYP/MODRUN
     8.          00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
     9.          00         1DIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
    10.          00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
    11.          00          COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
    12.          00          COMMON/TOLL/TOLLS(5,20,2)
    13.          00          COMMON/BAKUP/VOLBAK(5,20,2),CAPBAK(5,20,2),
    14.          00         1BAKTIM(5,20,2)
    15.          00          COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
    16.          00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
    17.          00          COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
    18.          00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
    19.          00          COMMON/SPREAD/ DIURN(3,2,2),SEASON(3,12)
    20.          00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
    21.          00          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
    22.          00          COMMON/SECOND/IAMPC,IPMPC,IPCWA,RATSEC(5)
    23.          00      C
    24.          00      C
    25.          00      C
    26.          00          LNKDIR=M9
    27.          00          IHOUR=1
    28.          00          IF (M.GE.3.OR.MODRUN.EQ.2.AND.IBOUND.EQ.2) IHOUR=2
    29.          00          ARRIVE=0.
    30.          00          RHO=0.
    31.          00          NBAR=0.
    32.          00          DBAR=0.
    33.          00          QLNGTH=0.
    34.          00          IF(LPATH.EQ.1) GO TO 5
    35.          00          LSPEED=5*INT(LINSPD(N,L,M)/5.+0.5)
    36.          00          LINSPD(N,L,M)=LSPEED
    37.          00          IF(LSPEED.GT.5) GO TO 50
    38.          00          WRITE(6,15)
    39.          00       15 FORMAT('1X,98HWARNING.  NON-ZERO SPEED MUST BE INPUT WITH EMISSION
    40.          00         1S.  A VALUE OF 45 MPH IS ASSUMED FOR THIS RUN.)
    41.          00          LINSPD(N,L,M)=45
    42.          00          GO TO 50
    43.          00        5 LNKTYP=LINTYP(N,L)
    44.          00          IF(IVSPRD(N,L)) 10,20,30
    45.          00      C   VOLUMES ARE ADT
    46.          02      10  VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
    47.          00          GO TO 35
    48.          00      C   VOLUMES ARE AADT.
    49.          00       30 IF(MODRUN.EQ.1) GO TO 10
    50.          00          MON=IDATE(2)
    51.          00          VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
    52.          00         1*SEASON(LNKTYP,MON)
    53.          00          GO TO 35
    54.          00       20 VOLHR(N,L,M)=VOLHR(N,L,M)
    55.          00       35 IF(IVFORM(N,L).NE.-1) VOLHR(N,L,M)=VOLHR(N,L,M)*NLANE(N,L,M9)
    56.          00      C   VARIABLE LINSPD DENOTES THE SPEED IN MPH ON THE LINK.  A VALUE OF
    57.          00      C   0 IMPLIES THET SPEED IS TO BE CALCULATED.  THIS REQUIRES THAT
    58.          00      C   CAPACITY BE KNOWN.
    59.          00          IF(LINSPD(N,L,M).GT.0) GO TO 50
    60.          00          IF(LINCAP(N,L).GT.0) GO TO 40
    61.          00          LINCAP(N,L)=2000
    62.          00          IF(IVFORM(N,L).NE.-1) LINCAP(N,L)=NLANE(N,L,M9)*2000
    63.          00       40 VC=VOLHR(N,L,M)/LINCAP(N,L)
    64.          00          IF(VC.LE.1.0) GO TO 45
```

*** K03 ***

```
*** K04 ***                                                                                                    *** K04 ***
   461.          00      242  WRITE(IWRI,241) IWD,(FREQP(IST,IWD,IWS),IWS=1,6)
   462.          00      245  CONTINUE
   463.          00      241  FORMAT(6X,I2,6X,6(2X,F10.3))
   464.          00      246  CONTINUE
   465.          00      249  CONTINUE
   466.          00           GO TO 260
   467.          00      250  WRITE(IWRI,251) WS,IWD,ISTAB
   468.          00      251  FORMAT(///,2X,14HWIND SPEED IS ,F5.1,4H MPS,/,2X,18HWIND DIRECTIO
   469.          00     1N IS ,I3,8H DEGREES,/,2X,19HSTABILITY IS CLASS ,I2)
   470.          00      260  CONTINUE
   471.          00           RETURN
   472.          00           END

END ELT.  ERRORS: NONE. TIME:  1.021 SEC. IMAGE COUNT: 472

@HDG,P  ******  INITEX  ******
```

*** K05 ***

```
      1.              00            SUBROUTINE MODMOD(ACCEL,DECEL,CY)
      2.              00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
      3.              00           1IACS
      4.              00            COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
      5.              00           1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
      6.              00            COMMON/PRE6/ILOOP
      7.              00            COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
      8.              00           1WRMCOR(20,6,3),ACFAC(2,20,3)
      9.              00            COMMON/MODEM/EMAD1(2,4,6),EMCR1(2,4,6),EMIDLE(4)
     10.              00            COMMON/MYMCOM/MYM,MYR,TF
     11.              00            DIMENSION EMAD(20,4),X(12),EMCRUZ(20,4),EMADMY(20,4),EMCRMY(20,4),
     12.              00           1FMODY(20)
     13.              00            INTEGER IGROUP(45,3)
     14.              00            INTEGER CY
     15.              00            REAL DETER(18,4),TF(20,6),MYM(20,6),MYR(20,6)
     16.              00            REAL UPDATE(45,3)
     17.              00            REAL BAD(12,4,18)
     18.              00      C     DATA SET IGROUP ASSOCIATES A MODAL MODEL GROUP WITH EACH MODEL
     19.              00      C       YEAR 1951 - 1995 FOR EACH REGION.
     20.              00            DATA IGROUP/
     21.              00           * 17*2,4,5,6,7,16,17,17,21*18,
     22.              00           1 15*2,3,4,6,7,14,15,15,21*18,
     23.              00           2 17*1,8,9,10,11,12,13,13,21*18/
     24.              00      C     DATA SET DETER CONTAINS THE COEFFICIENTS TO DETERIORATE THE MODAL
     25.              00      C      MODEL EMISSION ESTIMATES TO JULY 1975.
     26.              00            DATA DETER/
     27.              00           * 0.303,0.343,0.513,0.515,0.521,0.596,0.740,0.447,0.401,
     28.              00           1 0.470,0.514,0.204,0.167,0.248,0.158,0.260,0.184,-0.047,
     29.              00           2 0.117,0.169,0.421,0.471,0.494,0.558,0.686,0.234,0.203,
     30.              00           3 0.226,0.234,0.099,0.075,0.188,0.113,0.244,0.171,-0.037,
     31.              00           4 17*0.0,-0.009,18*0.0/
     32.              00      C     DATA SET UPDATE PROVIDES FACTORS FOR ESTIMATING MODAL EMISSIONS OF
     33.              00      C      MODEL YEARS LATER THAN 1975, IN THE MODEL YEAR, BY RATIOING THE
     34.              00      C       MODEL YEAR'S FTP EMISSIONS TO 1975 LOW ALTITUDE FTP EMISSIONS.
     35.              00            DATA UPDATE/
     36.              00           * 24*100.,5*1.0,0.217,15*0.128,
     37.              00           1 24*100.,6*0.236,15*0.207,
     38.              00           3 24*100.,2*1.970,0.591,2*1.970,0.374,3*0.202,12*0.128/
     39.              00      C     POLLUTANT 1 = HC
     40.              00      C     POLLUTANT 2 = CO
     41.              00      C     POLLUTANT 3 = NOX
     42.              00      C     POLLUTANT 4 = CO2
     43.              00            DATA ((BAD(I,J,J),I=1,12),J=1,4)/
     44.              00           *  0.90408921E-01,-0.43796499E-02, 0.46575181E-02, 0.46570692E-03,
     45.              00           *  0.82166778E-04,-0.11397827E-01, 0.13474836E-02,-0.36643314E-05,
     46.              00           * -0.22224063E-04, 0.30548215E-01,-0.22557352E-03, 0.16962629E-04,
     47.              00           *  0.10210419E+01,-0.46106476E-01, 0.12750413E-01, 0.19804664E-01,
     48.              00           *  0.10487151E-02,-0.15174127E+00, 0.10398060E-01,-0.79918522E-04,
     49.              00           * -0.27256622E-03, 0.33066291E+00,-0.24132896E-02, 0.32060244E-03,
     50.              00           * -0.35480408E-02, 0.58063143E-03, 0.10358056E-02,-0.45612847E-04,
     51.              00           *  0.47222775E-05, 0.21175048E-02,-0.18792201E-03, 0.31752579E-05,
     52.              00           *  0.33967408E-05,-0.30701563E-02,-0.31551067E-03, 0.23013577E-04,
     53.              00           *  0.71484953E+00, 0.15362855E-01, 0.87663889E-01, 0.14564995E-01,
     54.              00           *  0.45786635E-03, 0.13243157E-01, 0.31411450E-02, 0.04506202E-02,
     55.              00           * -0.12923865E-05, 0.86623710E+00, 0.10729667E-01, 0.12485683E-027
     56.              00            DATA ((BAD(I,J,2),I=1,12),J=1,4)/
     57.              00           *  0.74031665E-01,-0.30712544E-02, 0.60856193E-02, 0.21202014E-03,
     58.              00           *  0.57630212E-04,-0.73382109E-02, 0.88895089E-03,-0.11810798E-05,
     59.              00           * -0.14698754E-04, 0.27507048E-01,-0.28579007E-03, 0.14516277E-04,
     60.              00           *  0.63576120E+00,-0.24510358E-01, 0.24812852E-01, 0.49628541E-02,
     61.              00           *  0.44981830E-03, 0.47973134E-01,-0.61538182E-02, 0.10774070E-04,
     62.              00           * -0.67511965E-04, 0.30338836E+00,-0.13357187E-02, 0.13473761E-03,
     63.              00           *  0.50182119E-02,-0.17176081E-03, 0.51202268E-03, 0.17671579E-03,
     64.              00           *  0.20686188E-04,-0.32121711E-03, 0.16474385E-03, 0.30790188E-05,
```

```
   197.          00            WRITE(IWRI,70) (POL(JP,IPP),JP=1,5)
   198.          00       70   FORMAT(33X,5A4,/)
   199.          00            WRITE(IWRI,66)
   200.          00       64   FORMAT(15H  TEMPERATURE  ,I3,4H (F),/,20H  AIR CONDITIONING  ,I3,
   201.                       13H PC)
   202.          00       65   FORMAT(15H  COLD STARTS  ,I3,18H PC (NON-CATALYST),5X,I3,14H PC (C
   203.                       1ATALYST),/,15H  HOT STARTS  ,I3,14H PC (CATALYST),//)
   204.          00       66   FORMAT(13H  VEHICLE AGE,22X,11HSPEED (MPH),/,4X,7H(YEARS),10X,1H5,
   205.                       17X,2H10,6X,2H15,6X,2H20,6X,2H25,6X,2H30,/)
   206.          00            DO 68 II=1,20
   207.          00            INDEX=21-II
   208.          00       68   WRITE(IWRI,69) II,(RATIO(INDEX,J,IP),J=1,6)
   209.          00       69   FORMAT(6X,I3,7X,6(2X,F6.3))
   210.          00            WRITE(IWRI,229)
   211.          00       660  CONTINUE
   212.          00       C
   213.          00       C
   214.          00       C    PRINT FACTORS THAT CORRECT MODAL LDV EMISSIONS TO COMPOSITE
   215.          00       C    EMISSIONS FOR CBD PATHWAYS
   216.          00       C
   217.          00       C
   218.          00            WRITE(IWRI,72)
   219.          00       72   FORMAT(1H1,  91H  RATIO OF FTP COMPOSITE TO LDV EMISSION FACTORS F
   220.                       1OR CORRECTING MODAL CBD PATHWAY EMISSIONS,/////)
   221.          00            IF(ILOOP.EQ.6) GO TO 80
   222.          00       C
   223.          00       C    MODEL IS IN ANNUAL MODE
   224.          00       C
   225.          00            WRITE(IWRI,73)
   226.          00       73   FORMAT(//,23X,15HMORNING COMMUTE)
   227.          00            WRITE(IWRI,64) ITEMPA,IACAM
   228.          00            WRITE(IWRI,65) IICS,IICS,IICH
   229.          00            DO 79 IP=2,2
   230.          00            IPP=IP
   231.          00            IF(IP.EQ.1) IPP=4
   232.          00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
   233.          00            WRITE(IWRI,74)
   234.          00       74   FORMAT(13H  SPEED (MPH),11X,5HRATIO,/)
   235.          00            DO 75 IS=1,6
   236.          00            JSPD=IS*5
   237.          00       75   WRITE(IWRI,76) JSPD,RATEM(1,IS,IP)
   238.          00       76   FORMAT(6X,I3,14X,F7.3)
   239.          00       79   CONTINUE
   240.          00            WRITE(IWRI,77)
   241.          00       77   FORMAT(////,23X,15HEVENING COMMUTE)
   242.          00            WRITE(IWRI,64) ITEMPP,IACPM
   243.          00            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
   244.          00            DO 779 IP=2,2
   245.          00            IPP=IP
   246.          00            IF(IP.EQ.1) IPP=4
   247.          00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
   248.          00            WRITE(IWRI,74)
   249.          00            DO 78 IS=1,6
   250.          00            JSPD=IS*5
   251.          00       78   WRITE(IWRI,76) JSPD,RATEM(2,IS,IP)
   252.          00            WRITE(IWRI,229)
   253.          00       779  CONTINUE
   254.          00            GO TO 82
   255.          00       C
   256.          00       C    MODEL IS IN SHORT-TERM MODE
   257.          00       C
   258.          00        80  WRITE(IWRI,64) ITEMPS,IACS
   259.          00            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
   260.          00            DO 881 IP=2,2
   261.          00            IPP=IP
   262.          00            IF(IP.EQ.1) IPP=4
```

*** K06 ***

```
*** K07 ***                                                    *** K07 ***
@ELT,L  CEM,RUNTEST22
ELT 6R1 S7491C 04/23/82 15:45:23 (3)
     1.          03      @ASG,A TEST22.
     2.          00      @BRKPT PRINT$/TEST22
     3.          00      @ASG,A FILE8A.
     4.          00      @USE 8,FILE8A.
     5.          00      @XQT CEM,CEMAP
     6.          03      @ADD CEMDATA.TEMPFILE8
     7.          01      @FREE FILE8A.
     8.          01      @BRKPT PRINT$
     9.          01      @FREE TEST22.

END ELT.  ERRORS: NONE. TIME:  0.207 SEC. IMAGE COUNT: 9

@MDG,P  ******  RUNTEST6  ******
```

```
*** K08 ***
@ELT,L CEM.TAPEFILE5
ELT 8R1 S7491C 04/23/82 15:45:30 (0)
 SI IS NOT SIR TYPE SDF *[Faa[aaaaaa
     1.          00     1M  TEST 18                    781215 1 1 1 1
     2.          00     2M  2 3 3              2.00018939
     3.          00     3M  1 111 1500. 1200. 1000. 1200. 1 0    02214 0 0 0 0    1. 1.    2000. 2000.01
     4.          00     3M  1 211 1500. 1200. 1000. 1200. 1 0    02214 0 0 0 0 2000.2000.  8000. 8000.12
     5.          00     3M  1 311 1500. 1200. 1000. 1200. 1 0    02214 0 0 0 0 4000.4000.  8000. 8000.32
     6.          00     3M  2 112 1000.  800.  500.  800. 1 0    02212 0 0 0 0    1. 1.    2000. 2000.01
     7.          00     3M  2 223  500.  400.  300.  400. 1 0    02212 0 0 0 0    1. 1.    2000. 2000.22
     8.          00     3M  2 323  500.  400.  300.  400. 1 0    02212 0 0 0 0    1. 1.    2000. 2000.21
     9.          00     4M  1 2  0.  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0. 0.  0.  0.  0.0.0.6.6.
    10.          00     4M  1 3  0.  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0. 0.1500120010001000150 0.
    11.          00     4M  2 2500.400.400.300.1500150015001500 0. 0. 0. 0.  0.  0.  0.  0.0.0.0.0.
    12.          00     4M  2 3500.400.400.300.1500150015001500 60.60.30.30.  0.  0.  0.  0.0.0.0.0.
    13.          00     5M    1    1    1    1
    14.          00     6M  10 101.   .2   .2   .2   .2   .2
    15.          00     7M   11.0      1.0      6562.     100000.    1
    16.          00     7M   26563.    6563.    3281.     100000.    1
    17.          00
    18.          00
    19.          00
    20.          00
    21.          00
    22.          00
    23.          00
    24.          00
    25.          00
    26.          00
    27.          00
    28.          00
    29.          00
    30.          00
    31.          00
    32.          00
    33.          00
    34.          00
    35.          00
    36.          00
    37.          00
    38.          00
    39.          00
    40.          00
    41.          00
    42.          00
    43.          00
    44.          00
    45.          00
    46.          00
    47.          00
    48.          00
    49.          00
    50.          00
    51.          00
    52.          00
    53.          00
    54.          00
    55.          00
    56.          00
    57.          00
    58.          00
    59.          00
    60.          00
    61.          00
    62.          00
    63.          00              0.5
```

*** K08 ***

```
      00          *       15*2, 3, 3, 4, 5, 6, 7,13,16,16,18,18,18,18*15,                  00063900
      00          *       15*1, 1, 1, 8, 9,10,11,12,15,15,18,18,18,18*18,                  00064000
      00          *                                                                        00064100
      00          *       15*2, 2, 2, 4, 5, 6, 7,14,17,17,18,18,18,18*18,                  00064200
      00          *       15*2, 2, 2, 4, 5, 6, 7,13,16,16,18,18,18,18*18,                  00064300
      00          *       15*1, 1, 1, 8, 9,10,11,12,15,15,18,18,18,18*18,                  00064400
      00          *                                                                        00064500
      00          *       28*16,17*18,                                                     00064600
      00          *       27*13,18*18,                                                     00064700
      00          *       28*12,17*18,                                                     00064800
      00          *                                                                        00064900
      00          *       15*2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,18*17,            00065000
      00          *       15*2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,18*16,            00065100
      00          *       15*1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,18*15 /           00065200
      00      C                                                                            00065300
      00           DATA IEQNAR/17*1,7*2,5*3,16*4,  17*1,7*2,5*3,16*4,                      00065400
      00          *            17*1,7*2,2*3,19*4,  15*1,9*2,    21*4,                     00065500
      00          *            15*1,9*2,    21*4,  15*1,9*2,    21*4,                     00065600
      00          *            17*1,7*2,5*3,16*4,  17*1,7*2,5*3,16*4,                     00065700
      00          *            17*1,7*2,2*3,19*4,                                         00065800
      00          *            17*1,7*2,21*3,      17*1,7*2,21*3,                         00065900
      00          *            17*1,7*2,21*3,      17*1,7*2,    21*4,                     00066000
      00          *            17*1,7*2,    21*4,  17*1,7*2,    21*4,                     00066100
      00          *            17*1,7*2,21*3,      17*1,7*2,21*3,                         00066200
      00          *            17*1,7*2,21*3,                                             00066300
      00          *            28*2,17*4,          28*2,17*3,                             00066400
      00          *            28*2,17*3,          27*2,18*4,                             00066500
      00          *            27*2,18*4,          27*2,17*4,                             00066600
      00          *            28*2,17*3,          28*2,17*3,                             00066700
      00          *            28*2,17*3,                                                 00066800
      00          *            27*1,18*2,27*1,18*2,27*1,18*2,                             00066900
      00          *            27*1,18*2,27*1,18*2,27*1,18*2,                             00067000
      00          *            27*1,18*2,27*1,18*2,27*1,18*2  /                           00067100
      00      C                                                                            00067200
      00           DATA HDINDX/19*1,4*2,5*3,17*4,                                         00067300
      00          *            19*1,4*2,1*3,21*4,                                         00067400
      00          *            19*1,4*2,5*3,17*4   /                                      00067500
      00      C                                                                            00067600
      00      C                                                                            00057500
      00      C*************************************************************************00057600
      00      C                                                                            00057700
      00           IF(INITFL.NE.1) GO TO 177                                               00057800
      00      C  HERE 1ST TIME                                                             00057900
      00           INITFL = 0                                                              00058000
      00           SPB(1) = 26.0                                                           00058100
      00           SPB(2) = 16.0                                                           00058200
      00           SPB(3) = 26.0                                                           00058300
      00           CALL SPFCLX(SPB,SPBOT)                                                  00058400
      00      C                                                                            00068700
      00      C                                                                            00068800
      00           CALL GETCUM(CUMMIL)                                                     00068900
      00      C                                                                            00069000
      00      C                                                                            00069100
      00      C*************************************************************************00069200
      00      C                                                                            00059300
      00      177  CONTINUE                                                              00058500
      00      C                                                                            00058600
      00      C*************************************************************************00053700
      00      C                                                                            00058800
      00           CALL SPFCLX(SPD,SPBACK)                                                 00058900
      00      C                                                                            00059000
      00      C                                                                            00059100
      00           IF(ALHFLG.EQ.1) CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)         00059200
      00      C                                                                            00059300
      00      C*************************************************************************00059400
      00      C                                                                            00059500
```

*** L01 ***

```
@ELT,L CEM.COMPILE
ELT 8R1 S74Q1C 04/23/82 15:44:47 (4)
     1.          01      @FTN CEM.PREPRS
     2.          01      @FTN CEM.FTP
     3.          01      @FTN CEM.CORFAC
     4.          01      @FTN CEM.MODMOD
     5.          02      @FTN CEM.MOBLE1
     6.          01      @FTN CEM.OUTPUT
     7.          01      @FTN CEM.INPUT
     8.          01      @FTN CEM.EFCALX
     9.          01      @FTN CEM.BIGCFX
    10.          01      @FTN CEM.TRKOPC
    11.          01      @FTN CEM.SPFCLX
    12.          01      @FTN CEM.INITEX
    13.          01      @FTN CEM.TFCALX
    14.          01      @FTN CEM.EFALTX
    15.          01      @FTN CEM.GETCUM
    16.          01      @FTN CEM.BEFGEN
    17.          01      @FTN CEM.ALUH
    18.          01      @FTN CEM.CCEVAX
    19.          01      @FTN CEM.LDVIMX
    20.          01      @FTN CEM.BLKDAT
    21.          01      @FTN CEM.CEMAP
    22.          01      @FTN CEM.INDATA
    23.          01      @FTN CEM.TRAF
    24.          01      @FTN CEM.FREE
    25.          01      @FTN CEM.ART
    26.          01      @FTN CEM.MODE
    27.          01      @FTN CEM.EMISS
    28.          01      @FTN CEM.NPATHE
    29.          01      @FTN CEM.DISPRS
    30.          01      @FTN CEM.STREET
    31.          01      @FTN CEM.ROAD
    32.          01      @FTN CEM.NPATHD
    33.          01      @FTN CEM.SHORTY
    34.          01      @FTN CEM.STATIS
    35.          01      @FTN CEM.ANNOUT
    36.          01      @FTN CEM.BLKDAT1
    37.          04      @FTN CEM.GRAF
    38.          03      @END

END ELT.  ERRORS: NONE. TIME:  0.263 SEC. IMAGE COUNT: 38

@HDG,P  ******  CORFAC  ******
```

*** L02 ***

```
      00      C
      00      C
      00      C
      00           WRITE(6,100) N,L
      00      C
      00      C
      00      C
      00       100 FORMAT( 1X,25HWARNING. ******************,/,1X,44H VOLUME IS GREATER
      00          1THAN CAPACITY ON PATHWAY ,I3,7H, LINK ,I3,1H,,/,1X,68H VOLUME IS B
      00          2EING SET EQUAL TO CAPACITY FOR THIS RUN.  CHECK INPUTS..)
      00           VOLHR(N,L,M)=LINCAP(N,L)-1.0
      00           GO TO 40
      00        45 SPEED=60.0-25.0*VC-EXP(26.70*VC-24.45)
      00           LSPEED=5*INT(SPEED/5.+0.5)
      00           LINSPD(N,L,M)=LSPEED
      00        50 EXDIST=CONVRT*SQRT((X1(N,L)-X2(N,L))**2+(Y1(N,L)-Y2(N,L))**2)
      00           HALF=EXDIST/2.
      00           LSPEED=LINSPD(N,L,M)
      00           LINSPD(N,L,M)=LINSPD(N,L,M)/5-1
      00           IF(K9.EQ.0) GO TO 2000
      00           TT1(N,L,M9)=HALF*60./LSPEED
      00           TT2(N,L,M9)=TT1(N,L,M9)
      00           IF(INTYPE(N,L).EQ.0.OR.LPATH.EQ.2) GO TO 1000
      00           IF(INTYPE(N,L).EQ.1) GO TO 200
      00           IF(INTYPE(N,L).EQ.3) GO TO 300
      00       200 ARRIVE=VOLHR(N,L,M)/(TOLLS(N,L,M9)*60.)
      00           SERVIC=10.
      00           RHO=ARRIVE/SERVIC
      00           NBAR=INT(RHO/(1-RHO)+0.5)
      00           TOTBAK(N,L,M9)=NBAR
      00           DBAR=1./(SERVIC-ARRIVE)
      00           QLNGTH=(NBAR/TOLLS(N,L,M9))*(26.25/5280.)
      00           DISBAK(N,L,M9)=QLNGTH
      00           QEXTIM=DBAR
      00           QEXDIS=QLNGTH
      00           IF(QLNGTH.GE.HALF) GO TO 210
      00           TT1(N,L,M9)=TT1(N,L,M9)+DBAR-QLNGTH*60./LSPEED
      00           GO TO 1000
      00       210 IF(QLNGTH.GE.EXDIST) GO TO 220
      00           TT1(N,L,M9)=(HALF/QLNGTH)*DBAR
      00           TT2(N,L,M9)=TT2(N,L,M9)-(QLNGTH-HALF)*60./LSPEED+
      00          1DBAR*(QLNGTH-HALF)/QLNGTH
      00           GO TO 1000
      00       220 TT1(N,L,M9)=DBAR/2.
      00           TT2(N,L,M9)=TT1(N,L,M9)
      00           GO TO 1000
      00       300 QUEBAK=((VOLBAK(N,L,M9)-CAPBAK(N,L,M9))/60.)*BAKTIM(N,L,M9)
      00           TOTBAK(N,L,M9)=QUEBAK/(1-(VOLHR(N,L,M)/LINCAP(N,L)))
      00           THEAD=1.8760.
      00           DELBAK=THEAD*QUEBAK**2/TOTBAK(N,L,M9)
      00           DISBAK(N,L,M9)=DELBAK*20./60.
      00           IF(DISBAK(N,L,M9).GE.HALF) GO TO 310
      00           TT1(N,L,M9)=TT1(N,L,M9)+DELBAK-DISBAK(N,L,M9)*60./LSPEED
      00           GO TO 1000
      00       310 IF(DISBAK(N,L,M9).GE.EXDIST) GO TO 320
      00           TT1(N,L,M9)=(HALF/DISBAK(N,L,M9))*DELBAK
      00           TT2(N,L,M9)=TT2(N,L,M9)-(DISBAK(N,L,M9)-HALF)*60./LSPEED+DELBAK
      00          1*(DISBAK(N,L,M9)-HALF)/DISBAK(N,L,M9)
      00           GO TO 1000
      00       320 TT1(N,L,M9)=DELBAK/2.
      00           TT2(N,L,M9)=TT1(N,L,M9)
      00      1000 CONTINUE
      00           IF(M.EQ.2.OR.M.EQ.4) GO TO 2000
      00           TT3=TT1(N,L,M9)
      00           TT1(N,L,M9)=TT2(N,L,M9)
      00           TT2(N,L,M9)=TT3
```

*** L03 ***

```
*** L04 ***                                                                                                    *** L04 ***
@ELT,L CEM.INITEX
ELT BR1 S7491C 04/23/82 15:44:59 (0)
     1.          00          SUBROUTINE INITEX(CY)
     2.          00     C                                                                                    00075100
     3.          00          COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,
     4.          00         *       UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM
     5.          00          INTEGER ALTFLG,ALHFLG,TRKFLG,SP3FLG,UNFFLG,PRTFLG
     6.          00          INTEGER CY
     7.          00     C                                                                                    00075400
     8.          00          IF(ALTFLG.EQ.1) CALL EFALTX
     9.          00     C
    10.          00          CALL BEFGEN(CY)                                                                 00075500
    11.          00     C                                                                                    00075600
    12.          00          CALL CCEVAX                                                                     00075700
    13.          00     C                                                                                    00075800
    14.          00     C                                                                                    00076000
    15.          00     C                                                                                    00076100
    16.          00          RETURN                                                                          00076200
    17.          00     C                                                                                    00076300
    18.          00          END                                                                             00076400

END ELT.  ERRORS: NONE. TIME:  0.211 SEC. IMAGE COUNT: 18

@HDG,P  ******  INPUT  ******
```

```
     65.          00          * -0.23820230E-05, 0.35156019E-02,-0.47130720E-03, 0.32509648E-04,
     66.          00          *  0.12663460E+01, 0.24310540E-01, 0.10674191E+00, 0.33634592E-01,
     67.          00          *  0.82991435E-03, 0.30546652E-02, 0.77637769E-02, 0.10368174E-03,
     68.          00          * -0.32426819E-04, 0.90210754E+00, 0.12757938E-01, 0.13337550E-02/
     69.          00           DATA ((BAD(I,J,3),I=1,12),J=1,4)/
     70.          00          *  0.27212832E-01,-0.38454239E-03, 0.23166770E-02, 0.44772075E-03,
     71.          00          *  0.15004828E-04,-0.76230941E-03, 0.21233164E-03,-0.50537274E-05,
     72.          00          * -0.34107507E-05, 0.18768396E-01, 0.22212604E-03, 0.27736695E-05,
     73.          00          *  0.28043038E+00,-0.47583580E-02, 0.43524541E-01, 0.13808063E-02,
     74.          00          *  0.10734808E-03,-0.21531656E-02, 0.98090301E-03, 0.11250070E-04,
     75.          00          * -0.19257011E-05, 0.22221783E+00,-0.40214434E-02, 0.12248126E-03,
     76.          00          *  0.96157379E-02,-0.60726982E-03,-0.16718925E-03, 0.62551862E-03,
     77.          00          *  0.33326345E-04,-0.28037534E-02, 0.48555480E-04,-0.69296501E-06,
     78.          00          * -0.81203279E-05, 0.31921237E-02,-0.45137736E-03, 0.30037304E-04,
     79.          00          *  0.19142990E+01, 0.18390398E-02, 0.18897372E+00, 0.23611151E-01,
     80.          00          *  0.11208029E-02,-0.65214396E-01, 0.14079195E-01, 0.18680211E-03,
     81.          00          * -0.16246944E-03, 0.12807140E+01, 0.27259979E-01, 0.10226872E-02/
     82.          00           DATA ((BAD(I,J,4),I=1,12),J=1,4)/
     83.          00          *  0.47496643E-01,-0.19568307E-02, 0.40773861E-02, 0.41705192E-04,
     84.          00          *  0.35876787E-04,-0.48935749E-02, 0.59369067E-03,-0.25508832E-07,
     85.          00          * -0.92721875E-05, 0.21479022E-01,-0.22617164E-03, 0.71491559E-05,
     86.          00          *  0.49613750E+00,-0.14627926E-01, 0.61504323E-01,-0.10729437E-02,
     87.          00          *  0.21254545E-03,-0.68023652E-02, 0.97647379E-03, 0.10525828E-03,
     88.          00          *  0.37405029E-04,-0.26291054E+00,-0.18189936E-02, 0.84008745E-04,
     89.          00          *  0.56772530E-02, 0.98705335E-03,-0.20740409E-02, 0.91203256E-03,
     90.          00          *  0.27594753E-04,-0.26885503E-02, 0.46662986E-03,-0.32386451E-05,
     91.          00          * -0.79489128E-05, 0.46557412E-02,-0.56421268E-03, 0.36217714E-04,
     92.          00          *  0.15495239E+01,-0.22769805E-01, 0.10090774E+00,-0.39233319E-01,
     93.          00          *  0.92311646E-03,-0.23605488E-01, 0.11966014E-01, 0.83194202E-04,
     94.          00          * -0.94423056E-04, 0.12810173E+01, 0.64555928E-02, 0.13930460E-02/
     95.          00           DATA ((BAD(I,J,5),I=1,12),J=1,4)/
     96.          00          *  0.48391886E-01,-0.20854492E-02, 0.25164301E-02,-0.13065564E-03,
     97.          00          *  0.36623620E-04,-0.58513656E-02, 0.63295290E-03,-0.47845251E-07,
     98.          00          * -0.93267872E-05, 0.19670408E-01,-0.26843938E-03, 0.80316229E-05,
     99.          00          *  0.50066710E+00,-0.17586585E-01, 0.59339337E-01,-0.18133272E-02,
    100.          00          *  0.22920808E-03,-0.12368988E-01, 0.11492474E-02, 0.74215845E-04,
    101.          00          *  0.14108437E-04,-0.30531263E+00,-0.70244968E-02, 0.10785337E-03,
    102.          00          *  0.61012730E-02, 0.51880744E-03,-0.49174391E-02, 0.15498158E-02,
    103.          00          *  0.28336726E-04,-0.32206392E-02, 0.62561315E-03,-0.10417730E-04,
    104.          00          * -0.10286674E-04, 0.49542226E-02,-0.69028046E-03, 0.46556132E-04,
    105.          00          *  0.20011082E+01,-0.54947240E-03, 0.82746744E-01,-0.42140689E-01,
    106.          00          *  0.13168864E-02,-0.12974644E+00, 0.21255631E-01, 0.10462193E-03,
    107.          00          * -0.23740107E-03, 0.13393688E+01, 0.81634559E-02, 0.14972652E-02/
    108.          00           DATA ((BAD(I,J,6),I=1,12),J=1,4)/
    109.          00          *  0.26139319E-01,-0.88184210E-03, 0.29786373E-02, 0.52868199E-05,
    110.          00          *  0.18847655E-04,-0.19127505E-02, 0.25880150E-03, 0.16556996E-05,
    111.          00          * -0.31857508E-05, 0.12145314E-01,-0.11148876E-03, 0.68698928E-05,
    112.          00          *  0.39664203E+00,-0.13213880E-01, 0.58522373E-01,-0.19716325E-02,
    113.          00          *  0.16135792E-03,-0.43251887E-02, 0.21358513E-03, 0.86380664E-04,
    114.          00          *  0.40023766E-04,-0.24617422E+00,-0.68550445E-02, 0.10254829E-03,
    115.          00          *  0.73947375E-02,-0.97057258E-03,-0.29075867E-02, 0.10940076E-02,
    116.          00          *  0.39705779E-04,-0.39854408E-02,-0.68858410E-03, 0.37897062E-05,
    117.          00          * -0.11930029E-04, 0.59034862E-02,-0.77449786E-03, 0.47474878E-04,
    118.          00          *  0.22407360E+01,-0.36619878E-02, 0.15603191E+00,-0.43906531E-01,
    119.          00          *  0.12329484E-02,-0.99865854E-01, 0.18469601E-01,-0.37075606E-03,
    120.          00          * -0.19611655E-03, 0.14161215E+01, 0.12227114E-01, 0.13750154E-02/
    121.          00           DATA ((BAD(I,J,7),I=1,12),J=1,4)/
    122.          00          *  0.22663523E-01,-0.80241775E-03, 0.20660437E-02, 0.71488132E-04,
    123.          00          *  0.16488533E-04,-0.15534335E-02, 0.21698159E-03,-0.52437150E-06,
    124.          00          * -0.24381525E-05, 0.10398161E-01,-0.82791143E-04, 0.51495617E-05,
    125.          00          *  0.36676234E+00,-0.14121491E-01, 0.68226576E-01,-0.32857144E-02,
    126.          00          *  0.18291990E-03,-0.22933292E-02, 0.19526284E-04, 0.13627447E-03,
    127.          00          *  0.54617223E-04,-0.22517568E+00,-0.46133095E-02, 0.69841262E-04,
    128.          00          *  0.12388222E-01,-0.60462067E-03,-0.30205799E-02, 0.99574262E-03,
    129.          00          * -0.45765060E-04,-0.48322640E-02, 0.74534793E-03,-0.28292980E-05,
    130.          00          * -0.13106739E-04, 0.62181614E-02,-0.74182870E-03, 0.43711843E-04,
```

*** L05 ***

```
00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
00            WRITE(IWRI,74)
00            DO 81 IS=1,6
00            JSPD=IS+5
00       81   WRITE(IWRI,76) JSPD,RATEM(1,IS,IP)
00            WRITE(IWRI,229)
00       881  CONTINUE
00      C
00      C
00      C     PRINT CORRECTION FACTORS FOR AIR CONDITIONING FOR CBD PATHWAY
00      C     EMISSIONS (MODAL)
00      C
00      C
00       82   WRITE(IWRI,83)
00       83   FORMAT(1H1  ,76H  AIR CONDITIONING CORRECTION FACTORS FOR CBD PATH
00           1WAY MODAL EMISSION FACTORS,/)
00            IF(ILOOP.EQ.6) GO TO 90
00      C
00      C     MODEL IS IN ANNUAL MODE
00      C
00            WRITE(IWRI,84) IACAM,IACPM
00       84   FORMAT(18H  AIR CONDITIONING,5X,4HAM  ,I3,3H PC,5X,4HPM  ,I3,
00           13H PC,/)
00            DO 89 IP=2,2
00            IPP=IP
00            IF(IP.EQ.1) IPP=4
00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
00            WRITE(IWRI,85)
00       85   FORMAT(13H  VEHICLE AGE,5X,17HCORRECTION FACTOR)
00       86   FORMAT(4X,7H(YEARS),9X,2HAM,9X,2HPM,/)
00            WRITE(IWRI,86)
00            DO 87 II=1,20
00       87   WRITE(IWRI,88) II,(ACFAC(J,II,   IP),J=1,2)
00       88   FORMAT(6X,I3,4X,2(5X,F6.3))
00            WRITE(IWRI,229)
00       89   CONTINUE
00            GO TO 100
00      C
00      C     MODEL IS IN SHORT-TERM MODE
00      C
00       90   WRITE(IWRI,91) IACS
00       91   FORMAT(20H  AIR CONDITIONING  ,I3,3H PC,//)
00            DO 95 IP=2,2
00            IPP=IP
00            IF(IP.EQ.1) IPP=4
00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
00            WRITE(IWRI,85)
00            WRITE(IWRI,92)
00       92   FORMAT(4X,7H(YEARS),/)
00            DO 93 II=1,20
00       93   WRITE(IWRI,94) II,ACFAC(1,II,   IP)
00       94   FORMAT(6X,I3,14X,F6.3)
00            WRITE(IWRI,229)
00       95   CONTINUE
00            GO TO 100
00      C
00      C
00      C     PRINT AND CREATE FILE OF EMISSION FACTORS FOR CBD PATHWAY VMT
00      C
00      C
00       101  WRITE(IWRI,102)
00       102  FORMAT(/////,86H  COMPOSITE CRUISE (GRAMS/SEC) AND EXCESS (GRAMS)
00           1EMISSION FACTORS FOR CBD PATHWAY VMT,/)
00            IF(ILOOP.EQ.7) GO TO 110
00      C
00      C     MODEL IS IN ANNUAL MODE
```

*** L06 ***

```
@ELT,L CEM.RUNTEST6
ELT 8R1 S7491C 04/23/82 15:45:24 (2)
     1.          02     @ASG,A TEST6.
     2.          00     @BRKPT PRINT$/TEST6
     3.          02     @ASG,A FILE8A.
     4.          00     @USE 8,FILE8A.
     5.          00     @XQT CEM.PREPRS
     6.          01     @ADD CEMDATA.TAPEFILE6
     7.          00     @FREE FILE8A.
     8.          00     @BRKPT PRINT$
     9.          00     @FREE TEST6.

END ELT.  ERRORS: NONE. TIME:  0.204 SEC. IMAGE COUNT: 9


@HDG,P  ******  SHORTY  ******
```

*** L07 ***

*** L08 ***

```
    64.          00
    65.          00
    66.          00
    67.          00
    68.          00
    69.          00
    70.          00
    71.          00
    72.          00
    73.          00
    74.          00
    75.          00
    76.          00
    77.          00
    78.          00
    79.          00          0.5
    80.          00
    81.          00
    82.          00
    83.          00
    84.          00
    85.          00
    86.          00
    87.          00
    88.          00
    89.          00
    90.          00
    91.          00
    92.          00
    93.          00
    94.          00
    95.          00
    96.          00
    97.          00
    98.          00
    99.          00
   100.          00
   101.          00
   102.          00
   103.          00
   104.          00
   105.          00
   106.          00
   107.          00
   108.          00
   109.          00
   110.          00
   111.          00
   112.          00
   113.          00
   114.          00
   115.          00
   116.          00
   117.          00
   118.          00
   119.          00
   120.          00
   121.          00
   122.          00
   123.          00
   124.          00
   125.          00
   126.          00
   127.          00
   128.          00
   129.          00
```

```
   131.          00            FCO = PCCO*.01                                                                  00059600
   132.          00            FHC = PCHS*.01                                                                  00059700
   133.          00            FCC = PCCC*.01                                                                  00059800
   134.          00      C                                                                                     00059900
   135.          00      C**FRACTION COLD OP(NON-CAT): FCO                                                     00060000
   136.          00      C**FRACTION HOT START(CAT):  FHC                                                      00060100
   137.          00      C**FRACTION COLD OP(CAT)   :  FCC                                                     00060200
   138.          00      C**FRACTION HOT START(NON-CAT): FHO                                                   00060300
   139.          00            FHO = (FCC-FCO) + FHC                                                           00060400
   140.          00      C                                                                                     00060500
   141.          00            DO 500 I = 1,20                                                                 00060600
   142.          00      C                                                                                     00060700
   143.          00               MY = CY - (20-I)                                                             00060800
   144.          00               MYC = MY - 50                                                                00060900
   145.          00               IAGE = CY - MY                                                               00061000
   146.          00               AGE = IAGE                                                                   00061100
   147.          00      C                                                                                     00061200
   148.          00      C**********************                                                              00061300
   149.          00            IF(MYC.LE.0) STOP                                                               00061400
   150.          00      C>>>>>>>>>>>>>>>>>>>>>>>>>                                                            00061500
   151.          00      C                                                                                     00061600
   152.          00            DO 500 IMODE = 1,4                                                              00061700
   153.          00      C                                                                                     00061800
   154.          00            IMOD4 = IMODE                                                                   00072600
   155.          00            IF(IMODE.EQ.4) IMOD4 = 6                                                        00072700
   156.          00            IAGEM = IAGE                                                                    00072800
   157.          00               MAX = MAXAGE(IMODE)                                                          00072900
   158.          00            IF(IAGEM.GT.MAX) IAGEM = MAX                                                    00073000
   159.          00            IF(IAGEM.EQ.0) VMTAGE=0.0                                                       00073100
   160.          00      C                                                                                     00073300
   161.          00            IF(IAGEM.GT.0) VMTAGE=CUMMIL(IAGEM,IMOD4)*.0001                                 00061900
   162.          00      C                                                                                     00062000
   163.          00               IGX = G(MYC,IREJN,IMODE)                                                     00062100
   164.          00      C                                                                                     00062200
   165.          00            DO 500 IP = 1,3                                                                 00062300
   166.          00      C                                                                                     00062400
   167.          00      C**DEFAULT                                                                            00062500
   168.          00      C                                                                                     00062600
   169.          00            IEQN = IEQNAR(MYC,IP,IREJN+(IMODE-1)*3)                                         00062700
   170.          00      C                                                                                     00062800
   171.          00      C****************************************                                             00064700
   172.          00      C                                                                                     00064800
   173.          00      C                                                                                     00064900
   174.          00            FACL = FCO                                                                      00065000
   175.          00            FACM = FHO                                                                      00065100
   176.          00            IF(IEQN.LT.2) GO TO 888                                                         00065200
   177.          00            FACL = FCC                                                                      00065300
   178.          00            FACM = FHC                                                                      00065400
   179.          00      888   FACR = (1.0 - FACL - FACM)                                                      00065500
   180.          00      C                                                                                     00065600
   181.          00      C*************************************************************************************00065700
   182.          00      C                                                                                     00065800
   183.          00            DENOM = D1(IEQN,IP) + D2(IEQN,IP)*VMTAGE                                        00077200
   184.          00      C                                                                                     00065900
   185.          00            LEFT = FACL * (EXP(C(IEQN,1,IP)+T*C(IEQN,2,IP)) + C(IEQN,3,IP) +                00077400
   186.          00           *  C(IEQN,4,IP)*VMTAGE) * SPBACK(2,1,IP)/SPBOT(2,1,IP)                          00077500
   187.          00      C                                                                                     00077600
   188.          00      C                                                                                     00077700
   189.          00            MIDDLE=FACM*(C(IEQN,5,IP)+C(IEQN,6,IP)*VMTAGE)                                  00077800
   190.          00           *     *SPBACK(IGX,3,IP)/SPBOT(IGX,3,IP)                                          00077900
   191.          00      C                                                                                     00078000
   192.          00      C                                                                                     00078100
   193.          00            RIGHT=FACR*(C(IEQN,7,IP)+C(IEQN,8,IP)*VMTAGE)                                   00078200
   194.          00           *      *SPBACK(IGX,2,IP)/SPBOT(IGX,2,IP)                                          00078300
   195.          00      C                                                                                     00078400
   196.          00            TOP = LEFT + MIDDLE + RIGHT                                                     00067000
```

*** M01 ***

```
@ELT,L CEM.CORFAC
ELT 8R1 S74C1C 04/23/82 15:44:48 (0)
      1.          00            SUBROUTINE CORFAC(INITFL,CY)
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE COMPUTES THE TEMPERATURE/COLD START CORRECTION
      5.          00      C     FACTOR RATIOS NEEDED FOR MODAL EMISSIONS COMPUTATIONS
      6.          00      C     IT ALSO COMPUTES THE RATIO OF TOTAL EMISSIONS TO LDV EMISSIONS
      7.          00      C     FOR USE IN CORRECTING LDV MODAL EMISSIONS TO TOTAL EMISSIONS
      8.          00      C
      9.          00      C
     10.          00            COMMON/MODEM/EMAD1(2,4,6),EMCR1(2,4,6),EMIDLE(4)
     11.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,MS
     12.          00            COMMON/RET1/ALHRET(20,3)
     13.          00            COMMON/PRE1/MHFAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
     14.          00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     15.          00           1IACS
     16.          00            COMMON/PRE5/ICOLDN,ICOLDC,IHOTC
     17.          00            COMMON/PRE6/ILOOP
     18.          00            COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
     19.          00           1WRMCOR(20,6,3),ACFAC(2,20,3)
     20.          00            DIMENSION SPD(3),CFRET(20,3,6),COMCCC(6),EFRETM(3,6),WTEDEF(3),
     21.          00           1CLDCOR(20,6,3),XLOAD(3)
     22.          00            REAL LNKDTA(7),MS(6),IDLRTM(3,6),IDLWTD(3)
     23.          00            INTEGER CY
     24.          00            EQUIVALENCE (SPD(1),LNKDTA(1))
     25.          00            IF(MODRUN.EQ.2) GO TO 5
     26.          00      C     ANNUAL MODE
     27.          00            ITEMP=ITEMPP
     28.          00            IAC=IACPM
     29.          00            IAMPM=2
     30.          00            GO TO 10
     31.          00      C     SHORT-TERM MODE
     32.          00       5    ITEMP=ITEMPS
     33.          00            IAC=IACS
     34.          00            IAMPM=1
     35.          00      C
     36.          00      C
     37.          00      C     COMPUTE CORRECTION FACTOR
     38.          00      C
     39.          00       10   INCC=ICOLDN
     40.          00            ICH=IHOTC
     41.          00            ICC=ICOLDC
     42.          00            RSPD=0.
     43.          00            DO 20 IS=1,6
     44.          00            RSPD=RSPD+5.
     45.          00            CALL INPUT(INITFL,CY,ICYPR,RSPD)
     46.          00            CALL EFCALX(CY,LNKDTA,MS,EFRETM,WTEDEF,COMCCC,IDLRTM,IDLWTD,CFRET)
     47.          00            DO 16 IP=2,2
     48.          00      C
     49.          00      C     ON FIRST CALL STORE IDLE EMISSION FACTOR
     50.          00      C
     51.          00            IF(IS.EQ.1) EMIDLE(IP)=IDLWTD(IP)
     52.          00      C
     53.          00      C
     54.          00      C     STORE PM OR SINGLE COMMUTE RATIOS OF COMPOSITE TO LDV EMISSION
     55.          00      C     FACTORS FOR EACH SPEED.LE.30 FOR PM OR SINGLE COMMUTE COLD START
     56.          00      C     PERCENTAGES
     57.          00      C
     58.          00            RATEM(IAMPM,IS,IP)=WTEDEF(IP)/EFRETM(IP,1)
     59.          00      C
     60.          00      C
     61.          00      C     STORE COLD START/TEMPERATURE/SPEED CORRECTION FACTORS BY MODEL
     62.          00      C     YEAR AND SPEED FOR PM OR SINGLE COMMUTE COLD START PERCENTAGES
     63.          00      C
     64.          00            DO 15 IMY=1,20
```

*** M02 ***

```
*** M03 ***                                                    *** M03 ***
   131.          00      2000 CONTINUE
   132.          00     C
   133.          00     C
   134.          00     C
   135.          00           RETURN
   136.          00           END
END ELT.  ERRORS: NONE. TIME:  0.416 SEC. IMAGE COUNT: 136

@HDG,P  ******  FTP  ******
```

```
@ELT,L CEM.INPUT
ELT 8R1 S7491C 04/23/82 15:45:01 (0)
```

*** M04 ***

```
      1.          00            SUBROUTINE INPUT(INITFL,CY,ICYPR,RSPD)
      2.          00      C
      3.          00            COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
      4.          00            COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
      5.          00           1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
      6.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,   00008400
      7.          00           *              UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM             00008500
      8.          00            COMMON/REGCOM/IREJN                                               00005500
      9.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,VMTMIX                      00008700
     10.          00            COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC
     11.          00            COMMON/MYMCOM/MYM,MYR,TF                                          00005800
     12.          00            COMMON/JUNK1/AC_XLOAD,TRAILR_ABSHUM                               00005900
     13.          00            COMMON/JUNK2/HGWGT,HDWGT,HGCID,HDCID                              00006000
     14.          00            COMMON/PROJCM/PROJID                                              00006100
     15.          00            COMMON/IMCOM/ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2                    00006300
     16.          00            COMMON/SP1COM/SP1,SPAV                                            00009400
     17.          00      C
     18.          00            INTEGER ALHFLG,TRKFLG,ALTFLG,ALTKOD(4,20),CY,VMFLAG,SP3FLG,       00009600
     19.          00           *        NMHFLG,IDLFLG,UNFFLG,PRTFLG                               00009700
     20.          00            REAL XLOAD(3),SPD(3),VMTMIX(6),MYM(20,6),MYR(20,6),TF(20,6)       00009800
     21.          00            REAL LNKDTA(7),PROJID(20)                                         00009900
     22.          00            EQUIVALENCE (SPD(1),LNKDTA(1))                                    00006800
     23.          00      C     DATA VMTMIX/.803,.058,.058,.045,.031,.005/                        00010100
     24.          00            DATA IREAD,IWRI/5,6/                                              00007000
     25.          00      C                                                                       00007100
     26.          00      C*****************************************************************      00007200
     27.          00      C    1)2 OR 1 LDT INPUT VMT FLAG                                        00007300
     28.          00      C    2)HAVE OPTION TO INPUT TEMP, ETC. ONE TIME OR EACH                 00007400
     29.          00      C    6)FIX BEFGEN SO THAT CUM. MILEAGE INDEP OF NORMILIZATION           00007500
     30.          00      C      OF MYM.  ALSO, HAVE MC MYM BE SAME O.O.M. AS OTHER MODES         00007600
     31.          00      C                                                                       00007700
     32.          00      C***********************************************                        00007800
     33.          00      C**SKIP THIS STUFF EXCEPT DURING FIRST SUBR. CALL                       00007900
     34.          00            IF(INITFL.EQ.0) GO TO 500                                         00008000
     35.          00      C**READ IN PROJID,FLAGS, AND MYM-MYR                                    00008100
     36.          00      C                                                                       00008200
     37.          00      C     READ(IREAD,701) IPROMT                                            00011400
     38.          00            IPROMT=0
     39.          00      C                                                                       00008400
     40.          00            IF(IPROMT.EQ.1) WRITE(IWRI,752)                                   00011600
     41.          00      752   FORMAT('0ENTER PROJECT ID:')                                      00008600
     42.          00      C     READ(IREAD,700) PROJID
     43.          00      700   FORMAT(20A4)                                                      00008800
     44.          00            IF(IPROMT.EQ.1) WRITE(IWRI,763)                                   00012000
     45.          00      C     READ(IREAD,701) INFLAG                                            00012100
     46.          00            INFLAG=1
     47.          00            IF(IPROMT.EQ.1) WRITE(IWRI,757)                                   00012200
     48.          00      C     READ(IREAD,701) SP3FLG                                            00012300
     49.          00            SP3FLG=0
     50.          00            IF(IPROMT.EQ.1) WRITE(IWRI,753)                                   00012400
     51.          00      C     READ(IREAD,701) VMFLAG                                            00012500
     52.          00            VMFLAG=IVTFLG
     53.          00            IF(IPROMT.EQ.1) WRITE(IWRI,761)                                   00012600
     54.          00      C     READ(IREAD,701) MYMRFG                                            00012700
     55.          00            MYMRFG=MYFLAG
     56.          00            IF(IPROMT.EQ.1) WRITE(IWRI,754)                                   00012800
     57.          00      C     READ(IREAD,701) ALTFLG                                            00012900
     58.          00            ALTFLG=0
     59.          00            IF(IPROMT.EQ.1) WRITE(IWRI,762)                                   00013000
     60.          00      C     READ(IREAD,701) IMFLG                                             00013100
     61.          00            IMFLG=IMFLAG
     62.          00            IF(IPROMT.EQ.1) WRITE(IWRI,755)                                   00013200
     63.          00      C     READ(IREAD,701) ALHFLG                                            00013300
     64.          00            ALHFLG=1
```

```
    131.          00          *  0.23436623E+01,-0.11204816E-01, 0.10249770E+00, 0.42399745E-01,
    132.          00          *  0.13865831E-02,-0.12627708E+00, 0.21434125E-01, 0.78567691E-05,
    133.          00          * -0.25627413E-03, 0.14590406E+01, 0.98435469E-02, 0.14106291E-02/
    134.          00           DATA ((EAD(I,J,8),I=1,12),J=1,4)/
    135.          00          *  0.43856181E-01,-0.21134645E-02, 0.17915356E-02, 0.34610229E-03,
    136.          00          *  0.46185669E-04,-0.66099726E-02, 0.83727646E-03,-0.14535626E-05,
    137.          00          * -0.13788590E-04, 0.17964281E-01,-0.16962083E-03, 0.14447384E-04,
    138.          00          *  0.10577946E+01,-0.67509890E-01, 0.62050894E-01, 0.11177700E-01,
    139.          00          *  0.14054272E-02,-0.17354453E+00, 0.21822363E-01, 0.12219173E-03,
    140.          00          * -0.29136962E-03, 0.30515997E+00,-0.65815225E-02, 0.36294828E-03,
    141.          00          * -0.13883710E-01, 0.16726039E-02,-0.98873326E-03, 0.21440951E-03,
    142.          00          * -0.10875665E-04, 0.37202311E-02,-0.34903688E-03,-0.18900773E-05,
    143.          00          *  0.56169165E-05,-0.31288371E-02, 0.29795834E-03, 0.24409690E-04,
    144.          00          *  0.72498024E+00,-0.24696082E+01, 0.47383048E+01,-0.25520897E+01,
    145.          00          *  0.26412727E-03,-0.21000948E-01, 0.58031492E-02,-0.12748512E-03,
    146.          00          * -0.85865545E-04, 0.99308199E+00, 0.20286597E-01, 0.10996473E-02/
    147.          00           DATA ((BAD(I,J,9),I=1,12),J=1,4)/
    148.          00          *  0.32872163E-01,-0.14912151E-02, 0.16478680E-02, 0.17867390E-03,
    149.          00          *  0.30185285E-04,-0.37381337E-02, 0.46735839E-03,-0.11268759E-06,
    150.          00          * -0.71298127E-05, 0.14543414E-01, 0.14004891E-05, 0.93993158E-05,
    151.          00          *  0.68093568E+00,-0.48967101E+01, 0.90703070E-01, 0.41544966E-02,
    152.          00          *  0.97224675E-03,-0.92593908E-01, 0.13378501E-01, 0.19100340E-03,
    153.          00          * -0.13010977E-03, 0.19975567E+00,-0.77630468E-02, 0.33748685E-03,
    154.          00          *  0.34170204E-02, 0.19945543E-03,-0.30677355E-02, 0.61255763E-03,
    155.          00          *  0.18396604E-04,-0.11950256E-02, 0.19879726E-03,-0.70431242E-05,
    156.          00          * -0.43044383E-05, 0.37144264E-02,-0.47179312E-03, 0.27886097E-04,
    157.          00          *  0.11632671E+01,-0.98060407E-02, 0.10129895E-01, 0.24097517E-01,
    158.          00          *  0.44348370E-03,-0.40878017E-01, 0.59384778E-02,-0.58777251E-04,
    159.          00          * -0.36860161E-04, 0.11757145E+01,-0.18084500E-01, 0.10434175E-02/
    160.          00           DATA ((BAD(I,J,10),I=1,12),J=1,4)/
    161.          00          *  0.51083568E-01,-0.25070298E-02, 0.78906844E-03, 0.43855957E-03,
    162.          00          *  0.49117431E-04,-0.68533719E-02, 0.80447760E-03,-0.30797005E-05,
    163.          00          * -0.12975738E-04, 0.19100837E-01,-0.17357615E-03, 0.11204744E-04,
    164.          00          *  0.10887880E+01,-0.71653783E-01, 0.56213565E-01, 0.12077432E-01,
    165.          00          *  0.14173663E-02,-0.18283314E+00, 0.22780791E-01, 0.11450195E-03,
    166.          00          * -0.30368124E-03, 0.31737489E+00,-0.97049810E-02, 0.31322357E-03,
    167.          00          * -0.49334555E-03, 0.59314375E-03, 0.76942821E-03, 0.31159230E-04,
    168.          00          *  0.10607382E-04, 0.11690883E-02,-0.83193372E-04, 0.20388343E-05,
    169.          00          *  0.10587219E-05, 0.37931886E-02,-0.44279615E-03, 0.52576075E-04,
    170.          00          *  0.12125368E+01, 0.65406486E-02, 0.50941523E-01, 0.23041420E-01,
    171.          00          *  0.74173696E-03,-0.53354159E-01, 0.93286969E-02,-0.95937821E-05,
    172.          00          * -0.10803950E-03, 0.11116667E+01,-0.12330066E-01, 0.13453159E-02/
    173.          00           DATA ((BAD(I,J,11),I=1,12),J=1,4)/
    174.          00          *  0.39079703E-01,-0.19706031E-02, 0.38747867E-02, 0.97423879E-04,
    175.          00          *  0.41482446E-04,-0.33280076E-02, 0.43800077E-03, 0.56489025E-05,
    176.          00          * -0.44552689E-05, 0.12728568E-01,-0.24365130E-04, 0.85449728E-05,
    177.          00          *  0.12207556E+01,-0.89525878E-01, 0.95823228E-01, 0.61595142E-02,
    178.          00          *  0.17752303E-02,-0.19405907E+00, 0.24501167E-01, 0.30660117E-03,
    179.          00          * -0.31120144E-03, 0.30530828E+00,-0.67905560E-02, 0.26574072E-03,
    180.          00          * -0.56096725E-04, 0.84308651E-03,-0.44325415E-03, 0.45987382E-03,
    181.          00          *  0.75034513E-05,-0.16736379E-02, 0.50821458E-04,-0.73274914E-05,
    182.          00          * -0.92814494E-03, 0.34245681E-02,-0.38729185E-03, 0.30544323E-04,
    183.          00          *  0.15559692E+01,-0.88350438E-01, 0.12765017E-01, 0.30597743E-01,
    184.          00          *  0.90960856E-03,-0.26481066E-01, 0.10340001E-01,-0.10616157E-03,
    185.          00          * -0.11447867E-03, 0.13161192E+01, 0.25253572E-01, 0.10734126E-02/
    186.          00           DATA ((BAD(I,J,12),I=1,12),J=1,4)/
    187.          00          *  0.54055668E-01,-0.26892500E-02,-0.10134301E-02, 0.19053000E-03,
    188.          00          *  0.56229997E-04,-0.55606700E-02, 0.69287990E-03,-0.89999997E-06,
    189.          00          * -0.11450000E-04, 0.12813311E-01,-0.21308000E-03, 0.12410000E-04,
    190.          00          *  0.14931040E+01,-0.10349673E+00, 0.72227307E-02, 0.59160888E-02,
    191.          00          *  0.20053601E-02,-0.23721021E+00, 0.26225589E-01, 0.23920002E-04,
    192.          00          * -0.39849989E-03, 0.32876998E+00,-0.91728717E-02, 0.29819994E-03,
    193.          00          *  0.14497600E-02, 0.43599005E-03, 0.17710000E-03, 0.23360000E-04,
    194.          00          *  0.11920000E-04, 0.18444999E-03, 0.16439997E-04, 0.66000001E-06,
    195.          00          * -0.11200000E-05, 0.23355400E-02,-0.60488923E-03, 0.33920005E-04,
    196.          00          *  0.22299948E+01,-0.24412408E-01, 0.56603178E-01, 0.23462300E-02,
```

*** M05 ***

```
      C
            WRITE(IWRI,23) ITEMPA,ITEMPP,IACAM,IACPM
            WRITE(IWRI,103)
  103       FORMAT(17H  MORNING COMMUTE)
            WRITE(IWRI,65) IICS,IICS,IICH
            WRITE(IWRI,104)
  104       FORMAT(17H  EVENING COMMUTE)
            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
      C     ******************************************************************
      C     WHEN CHANGING PROGRAM TO BE ABLE TO HANDLE HYDROCARBONS, PROVISION
      C     MUST BE MADE TO PASS IN EVAPORATIVE AND CRANKCASE EMISSIONS AND
      C     TO ADD THEM TO EXHAUST HC EMISSIONS
      C     ******************************************************************
            DO 109 IP=2,2
            IPP=IP
            IF(IP.EQ.1) IPP=4
            WRITE(IWRI,1001)  (POL(JP,IPP),JP=1,5)
 1001       FORMAT(35X,5A4)
            WRITE(IWRI,105)
  105       FORMAT(19X,22HCRUISE EMISSION FACTOR,6X,22HEXCESS EMISSION FACTOR)
            WRITE(IWRI,106)
  106       FORMAT(13H  SPEED (MPH),9X,2HAM,10X,2HPM,14X,2HAM,10X,2HPM,/)
            DO 107 II=1,6
            JSPD=II+5
  107       WRITE(IWRI,108) JSPD,(EMCR1(JJ,IP,II),JJ=1,2),(EMAD1(JJ,IP,II),
           1JJ=1,2)
  108       FORMAT(6X,I3,9X,1PE10.3,2X,E10.3,3X,2(2X,E10.3))
            WRITE(IFICE,28) ((EMCR1(I1,IP,I2),EMAD1(I1,IP,I2),I2=1,6),I1=1,2)
            WRITE(IWRI,229)
  109       CONTINUE
            GO TO 115
      C
      C     MODEL IS IN SHORT-TERM MODE
      C
  110       WRITE(IWRI,42) ITEMPS,IACS
            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
            DO 114 IP=2,2
            IPP=IP
            IF(IP.EQ.1) IPP=4
            WRITE(IWRI,1001) (POL(JP,IPP),JP=1,5)
            WRITE(IWRI,111)
  111       FORMAT(13H  SPEED (MPH),5X,22HCRUISE EMISSION FACTOR,5X,22HEXCESS
           1 EMISSION FACTOR,/)
            DO 112 II=1,6
            JSPD=II+5
  112       WRITE(IWRI,113) JSPD,EMCR1(1,IP,II),EMAD1(1,IP,II)
  113       FORMAT(6X,I3,14X,1PE10.3,16X,E10.3)
            WRITE(IFICE,28) (EMCR1(1,IP,I1),EMAD1(1,IP,I1),I1=1,6)
            WRITE(IWRI,229)
  114       CONTINUE
      C
      C
      C     PRINT AND CREATE A FILE OF THE IDLE EMISSION FACTOR FOR CBD
      C     PATHWAYS
      C
      C
  115       WRITE(IWRI,120)
  120       FORMAT(////,51H  IDLE EMISSION FACTOR (GRAMS/SEC) FOR CBD PATHWAY
           1S,///)
            WRITE(IWRI,121)
  121       FORMAT(11H  POLLUTANT,16X,15HEMISSION FACTOR,/)
            DO 122 IP=2,2
            IPP=IP
            IF(IP.EQ.1) IPP=4
            WRITE(IWRI,123) (POL(JP,IPP),JP=1,5),EMIDLE(IP)
  123       FORMAT(2X,5A4,7X,1PE10.3)
```

```
      1.          00            SUBROUTINE SHORTY
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE COMPUTES AND PRINTS THE MODEL OUTPUT STATISTICS
      5.          00      C     FOR THE SHORT-TERM MODE OF OPERATION
      6.          00      C
      7.          00      C
      8.          00            COMMON/IO/IREAD,IWRI,IFILE
      9.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     10.          00            COMMON/STRT/EXST(5,3,2)
     11.          00            COMMON/NOPATH/EXNPAM(5,5,3),EXNPPM(5,5,3)
     12.          00            COMMON/NOSTRT/EXNSAM(5,80,3),EXNSPM(5,80,3)
     13.          00            COMMON/LSTSEG/CNPLST(5,3)
     14.          00            COMMON/NOCOMM/NCOMM(5,2)
     15.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     16.          00      C     THESE VARIABLES ARE PUT IN COMMON IN THIS SUBROUTINE SIMPLY TO
     17.          00      C     SAVE STORAGE SPACE--THEY NEED NOT BE IN COMMON IN THIS ROUTINE
     18.          00      C     WITH OTHER ROUTINES
     19.          00            COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     20.          00           1EXPSUM(3,2),AVCONC(3,5,2)
     21.          00            DIMENSION GREXP(3),EXSQSM(3)
     22.          00      C
     23.          00      C     PRINT HEADING
     24.          00            WRITE(IWRI,1)
     25.          00       1    FORMAT(1H1,40X,28HCOMMUTER EXPOSURE STATISTICS,//////)
     26.          00      C
     27.          00            DO 10 IP=2,2
     28.          00            GREXP(IP)=0.
     29.          00            DO 10 IPATH=1,NPATHS
     30.          00      C     NOTE NON-STREET CANYON EXPOSURE ARRAY IS NOT DIMENSIONED FOR ANY
     31.          00      C     POLLUTANT OTHER THAN CO
     32.          00      C     REPLACE STREET CANYON EXPOSURE WITH SUM OF STREET CANYON AND
     33.          00      C     NON-STREET CANYON PATHWAY EXPOSURES
     34.          00            EXST(IPATH,IP,1)=EXST(IPATH,IP,1)+EXNSAM(IPATH,1,1)
     35.          00      C     ADD STREET CANYON, NON-STREET CANYON, AND NON-PATHWAY EXPOSURES
     36.          00            EXP(IPATH,IP,1)=EXST(IPATH,IP,1)+EXNPAM(IPATH,1,IP)
     37.          00      C     FIND LARGEST EXPOSURE
     38.          00            IF(EXP(IPATH,IP,1).GT.GREXP(IP)) GREXP(IP)=EXP(IPATH,IP,1)
     39.          00       10   CONTINUE
     40.          00      C
     41.          00      C     BASED ON MAX EXPOSURE VALUE, DETERMINE VALUE LIMITS ON EXPOSURE
     42.          00      C     CLASSES
     43.          00            DO 35 IP=2,2
     44.          00            IF(GREXP(IP).LT.1.0) GO TO 30
     45.          00            IF(GREXP(IP).LT.10.0) GO TO 25
     46.          00            DUM=GREXP(IP)
     47.          00            DO 22 II=1,10
     48.          00            DUM=DUM/10.
     49.          00            IF(DUM.GT.10.) GO TO 22
     50.          00            IF(DUM.EQ.10.) GO TO 21
     51.          00            IDUM=DUM+1.
     52.          00            EINTVL(IP)=IDUM*10.**(II-1)
     53.          00            GO TO 35
     54.          00       21   EINTVL(IP)=10.
     55.          00            GO TO 35
     56.          00       22   CONTINUE
     57.          00       25   IF(GREXP(IP).EQ.1.0) GO TO 26
     58.          00            IF(GREXP(IP).EQ.10.0) GO TO 27
     59.          00            IDUM=GREXP(IP)+1.
     60.          00            EINTVL(IP)=IDUM/10.
     61.          00            GO TO 35
     62.          00       26   EINTVL(IP)=0.1
     63.          00            GO TO 35
     64.          00       27   EINTVL(IP)=1.0
```

*** M08 ***

```
130.          00
131.          00
132.          00
133.          00
134.          00
135.          00
136.          00
137.          00
138.          00
139.          00
140.          00
141.          00
142.          00
143.          00
144.          00
145.          00
146.          00
147.          00
148.          00
149.          00
150.          00
151.          00
152.          00
153.          00
154.          00
155.          00
156.          00
157.          00
158.          00
159.          00
160.          00
161.          00
162.          00              0.5
163.          00
164.          00
165.          00
166.          00
167.          00
168.          00
169.          00
170.          00
171.          00
172.          00
173.          00
174.          00
175.          00
176.          00
177.          00
178.          00              0.5
179.          00
180.          00
181.          00
182.          00
183.          00
184.          00
185.          00
186.          00
187.          00
188.          00
189.          00
190.          00
191.          00
192.          00
193.          00
194.          00
195.          00
```

```
*** N01 ***
   197.          00      C                                                                                    00067100
   198.          00      C                                                                                    00067200
   199.          00            FACTOR = TOP/DENOM                                                             00067300
   200.          00      C                                                                                    00067400
   201.          00            IF(ALHFLG.EQ.1) FACTOR = FACTOR*ALHRET(I,IMODE,IP)                             00067500
   202.          00      C                                                                                    00067600
   203.          00            IMOD2 = IMODE                                                                  00067700
   204.          00      C                                                                                    00067800
   205.          00            IF(IMODE.EQ.4) IMOD2 = 6                                                       00067900
   206.          00      C                                                                                    00068000
   207.          00            CFRET(I,IP,IMOD2) = FACTOR                                                     00068100
   208.          00      C                                                                                    00068200
   209.          00      500   CONTINUE                                                                       00068300
   210.          00      C                                                                                    00068400
   211.          00      C*********************************************************************             00068500
   212.          00      C                                                                                    00068600
   213.          00      C                                                                                    00068700
   214.          00      C   FOR MODES 4 AND 5                                                               00068800
   215.          00      C                                                                                    00068900
   216.          00      C                                                                                    00069000
   217.          00            DATA ATR/ 2.42, 1.14, 1.56, 1.54,                                              00069100
   218.          00           *          1.74, 1.54, 1.24, 0.62,                                              00069200
   219.          00           *           .851, .812, .820, .764,                                             00069300
   220.          00           *          0.94, 0.94,  .820, 1.20,                                             00069400
   221.          00           *          1.44, 1.44, 1.20, 1.44,                                              00069500
   222.          00           *          0.62, 0.62, 0.72, 1.00 /                                             00069600
   223.          00      C                                                                                    00069700
   224.          00            DATA BTR/ -.153, -.065, -.096, -.071,                                          00069800
   225.          00           *          -.117, -.097, -.078, -.039,                                          00069900
   226.          00           *           .0074, .0094, .0081, .0120,                                         00070000
   227.          00           *          -.055, -.055, -.051, -.072,                                          00070100
   228.          00           *          -.092, -.092, -.072, -.088,                                          00070200
   229.          00           *          -.043, -.043, -.054, -.077 /                                         00070300
   230.          00      C                                                                                    00070400
   231.          00            DATA CTR/ .0016, .0004, .0009, -.0003,                                         00070500
   232.          00           *          .0015, .0010, .0008, .0007,                                          00070600
   233.          00           *          .0000, .0000, .0001, .0000,                                          00070700
   234.          00           *          .0004, .0004, .0005, .0006,                                          00070800
   235.          00           *          .0010, .0010, .0006, .0008,                                          00070900
   236.          00           *          .0006, .0006, .0009, .0012 /                                         00071000
   237.          00      C                                                                                    00071100
   238.          00            IF(TRKFLG.EQ.1) CALL TRKOPC(CY,HGWGT,HDWGT,HGCID,HDCID)                       00071200
   239.          00      C                                                                                    00071300
   240.          00      C     IF(SP3FLG.EQ.0) SPAV = SPD(1)/(1.3777386 - (PCCC*.30/79.42))                   00082900
   241.          00            IF(SP3FLG.EQ.0) SPAV = SP1                                                     00083000
   242.          00      C     IF(SP3FLG.EQ.1) SPAV = SPD(1)/(1.41114406 - (PCCO*.0041114406))                00083100
   243.          00            IF(SP3FLG.EQ.1) SPAV = SPD(2)                                                  00083200
   244.          00      C     IF(SP3FLG.EQ.1) SPAV = AMIN1(SPD(1),SPD(2))                                    00083300
   245.          00      C***ELIMINATE TWO LINES ABOVE                                                        00083400
   246.          00      C                                                                                    00083500
   247.          00      C                                                                                    00083600
   248.          00            DO 700 IMODE = 4,5                                                             00071700
   249.          00            IM = IMODE-3                                                                   00071800
   250.          00               DO 700 IP = 1,3                                                             00071900
   251.          00      C                                                                                    00072000
   252.          00            IMY1 = CY-19                                                                   00072100
   253.          00                 DO 700 IMY = IMY1,CY                                                      00072200
   254.          00            IMYP = IMY - 50                                                                00072300
   255.          00            IF(IMYP.LT.1) IMYP=1                                                           00072400
   256.          00      C                                                                                    00072500
   257.          00                  IX = 20-(CY-IMY)                                                        00072600
   258.          00      C                                                                                    00072700
   259.          00               INDX = HDINDX(IMYP,IREJN)                                                   00072800
   260.          00      C                                                                                    00072900
   261.          00            IF(IP.EQ.3.AND.IMODE.EQ.4) GO TO 720                                           00073000
   262.          00      C                                                                                    00073100
```

```
*** N02 ***
    65.          00      15   CLDCOR(IMY,IS,IP)=CFRET(IMY,IP,1)
    66.          00      16   CONTINUE
    67.          00      20   CONTINUE
    68.          00       C
    69.          00       C
    70.          00       C     COMPUTE RATIOS OF TEMPERATURE/COLD START/SPEED CORRECTION FACTORS
    71.          00       C     FOR EACH MODEL YEAR AND SPEED
    72.          00       C
    73.          00             DO 30 IP=2,2
    74.          00             DO 30 IS=1,6
    75.          00             DO 30 IMY=1,20
    76.          00      30     RATIO(IMY,IS,IP)=CLDCOR(IMY,IS,IP)/WRMCOR(IMY,IS,IP)
    77.          00       C
    78.          00       C
    79.          00       C     COMPUTE AM AND PM OR SINGLE COMMUTE AIR CONDITIONING CORRECTION
    80.          00       C     FACTORS
    81.          00       C
    82.          00       C
    83.          00             XLOAD(1)=0.
    84.          00             XLOAD(2)=0.
    85.          00             XLOAD(3)=0.
    86.          00             TRAILR=0.
    87.          00             ABSHUM=75.
    88.          00             IF(MODRUN.EQ.2) GO TO 35
    89.          00       C
    90.          00       C     ANNUAL MODE
    91.          00       C
    92.          00             AC=IACPM/100.
    93.          00             CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)
    94.          00             GO TO 36
    95.          00      32     AC=IACAM/100.
    96.          00             CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)
    97.          00             IAMPM=1
    98.          00             GO TO 36
    99.          00       C
   100.          00       C     SHORT-TERM MODE
   101.          00       C
   102.          00      35     AC=IACS/100.
   103.          00             CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)
   104.          00      36     DO 40 IP=2,2
   105.          00             DO 40 IMY=1,20
   106.          00             ACFAC(IAMPM,IMY,IP)=ALHRET(IMY,1,IP)
   107.          00      40     CONTINUE
   108.          00             IF(IAMPM.EQ.2) GO TO 32
   109.          00       C
   110.          00       C
   111.          00       C     PRINT OUTPUT OF SUBROUTINE CORFAC
   112.          00       C
   113.          00       C
   114.          00             IF(MODRUN.EQ.2) GO TO 41
   115.          00             ILOOP=5
   116.          00             GO TO 42
   117.          00      41     ILOOP=6
   118.          00      42     CALL OUTPUT(CY)
   119.          00             RETURN
   120.          00             END
END ELT.  ERRORS: NONE. TIME:  0.315 SEC. IMAGE COUNT: 120

@HDG,P  ******  DATA1  ******
```

@ELT,L CEM.FTP
ELT 8R1 S7491C 04/23/82 15:44:54 (0)
*** N03 ***

```
      1.          00          SUBROUTINE FTP(INITFL,CY)
      2.          00     C
      3.          00     C
      4.          00     C    THIS SUBROUTINE CALLS MOBLE1 SEVERAL TIMES TO CREATE TABLES OF FTP
      5.          00     C    EMISSION FACTORS FOR NON-CBD PATHWAYS AND NON-PATHWAY SOURCES
      6.          00     C
      7.          00     C
      8.          00          COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
      9.          00          COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     10.          00         1IACS
     11.          00          COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
     12.          00         1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
     13.          00          COMMON/PRE6/ILOOP
     14.          00          INTEGER CY
     15.          00          IF(MODRUN.EQ.2) GO TO 50
     16.          00     C
     17.          00     C
     18.          00     C    MODEL IS IN ANNUAL MODE
     19.          00     C
     20.          00     C
     21.          00     C
     22.          00     C    ARE NON-CBD PATHWAY EMISSION FACTORS TO BE COMPUTED
     23.          00     C
     24.          00          IF(LPATH.EQ.2) GO TO 10
     25.          00     C
     26.          00     C    COMPUTE NON-CBD PATHWAY EMISSION FACTORS
     27.          00     C
     28.          00          ILOOP=1
     29.          00     C    100 PC WARM OPERATION
     30.          00          INCC=0
     31.          00          ICH=0
     32.          00          ICC=0
     33.          00     C    AM COMPUTATIONS
     34.          00          IAC=IACAM
     35.          00          ITEMP=ITEMPA
     36.          00          IAMPM=1
     37.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     38.          00     C    PM COMPUTATIONS
     39.          00          IAC=IACPM
     40.          00          ITEMP=ITEMPP
     41.          00          IAMPM=2
     42.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     43.          00          CALL OUTPUT(CY)
     44.          00     C
     45.          00     C
     46.          00     C    ARE NON-PATHWAY EMISSION FACTORS TO BE COMPUTED
     47.          00     C
     48.          00     10   IF(LNPATH.EQ.2) GO TO 100
     49.          00     C
     50.          00     C    COMPUTE NON-PATHWAY EMISSION FACTORS
     51.          00     C
     52.          00          ILOOP=2
     53.          00     C    AM COMPUTATIONS
     54.          00          IAC=IACAM
     55.          00          ITEMP=ITEMPA
     56.          00          IAMPM=1
     57.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     58.          00     C    PM COMPUTATIONS
     59.          00          IAC=IACPM
     60.          00          ITEMP=ITEMPP
     61.          00          IAMPM=2
     62.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     63.          00          CALL OUTPUT(CY)
     64.          00          GO TO 100
```

```
      00          IF(IPROMT.EQ.1) WRITE(IWRI,756)                                   00013400
      00    C     READ(IREAD,701) TRKFLG                                            00013500
      00          TRKFLG=0
      00          IF(IPROMT.EQ.1) WRITE(IWRI,766)                                   00013600
      00    C     READ(IREAD,701) IFORM                                             00013700
      00          IFORM=1
      00          IF(IPROMT.EQ.1) WRITE(IWRI,765)                                   00013800
      00    C     READ(IREAD,701) PRTFLG                                            00013900
      00          PRTFLG=2
      00          IF(IPROMT.EQ.1) WRITE(IWRI,764)                                   00014000
      00    C     READ(IREAD,701) ICEVFG                                            00014100
      00          ICEVFG=0
      00          IF(IPROMT.EQ.1) WRITE(IWRI,759)                                   00014200
      00    C     READ(IREAD,701) IDLFLG                                            00014300
      00          IDLFLG=0
      00          IF(IPROMT.EQ.1) WRITE(IWRI,758)                                   00014400
      00    C     READ(IREAD,701) NMHFLG                                            00014500
      00          NMHFLG=0
      00          IF(IPROMT.EQ.1) WRITE(IWRI,760)                                   00014600
      00    C     READ(IREAD,701) UNFFLG                                            00014700
      00          UNFFLG=0
      00    C
      00    701   FORMAT(I1)                                                       00014800
      00    753   FORMAT(' ENTER VMFLAG:')                                         00014900
      00    754   FORMAT(' ENTER ALTFLG:')                                        00011400
      00    755   FORMAT(' ENTER ALHFLG:')                                        00011500
      00    756   FORMAT(' ENTER TRKFLG:')                                        00011600
      00    757   FORMAT(' ENTER SP3FLG:')                                        00011700
      00    758   FORMAT(' ENTER NMHFLG:')                                        00011800
      00    759   FORMAT(' ENTER IDLFLG:')                                        00011900
      00    760   FORMAT(' ENTER UNFFLG:')                                        00012000
      00    761   FORMAT(' ENTER MYMRFG:')                                        00012100
      00    762   FORMAT(' ENTER IMFLG:')                                         00012200
      00    763   FORMAT(' ENTER INFLAG:')                                        00012300
      00    764   FORMAT(' ENTER ICEVFG:')
      00    765   FORMAT(' ENTER PRTFLG:')
      00    766   FORMAT(' ENTER IFORM:')                                         00016300
      00          IF(MYMRFG.GT.0.AND.IPROMT.EQ.1)WRITE(IWRI,702)
      00    702   FORMAT(1H ,'ENTER MYM OR MYR OR MYM AND MYR -FORMAT 6X20F4.1')
      00    C                                                                     00012500
      00          IF(MYMRFG.EQ.1.OR.MYMRFG.EQ.3) STOP
      00    C     IF(MYMRFG.EQ.2.OR.MYMRFG.EQ.3) READ(IREAD,710) MYR              00016700
      00          IF(MYMRFG.EQ.0) GO TO 7001
      00          DO 7000 MM=1,20
      00     7000 MYR(MM,1)=FMODYR(MM)
      00     7001 IF(VMFLAG.EQ.0) GO TO 7005
      00          DO 7002 MM=1,6
      00     7002 VMTMIX(MM)=FVEHTY(MM)
      00    710   FORMAT(20F4.1)                                                  00012700
      00    C                                                                     00012800
      00    C** HERE READ IN E.F. MODIFICATION DATA
      00     7005 IF(ALTFLG.NE.1) GO TO 810
      00          IF(IPROMT.EQ.1) WRITE(IWRI,790)
      00    790   FORMAT(1X,'CENTER NO. OF NEW E.F. INTERCEPT/SLOPE PAIRS(I2)')
      00          READ(IREAD,791)NEWFAC
      00    791   FORMAT(I2)
      00    C
      00          DO 800 IFAC=1,NEWFAC
      00          IF(IPROMT.EQ.1) WRITE(IWRI,792)
      00    792   FORMAT(1X,'ENTER REGION, VEH. TYPE,POLLUTANT,FIRST MY',
                 1 /1X,'LAST MY,NEW INTERCEPT(A) AND NEW SLOPE(B)'/1X,
                 2 'FORMAT I1,1X,I1,1X,I1,1X,I2,1X,I2,1X,F6.2,1X,F6.2')
      00          READ(IREAD,793) IRGALT,IMDALT,IPCALT,MYFRST,MYLAST,BASNEW,DELNEW
      00    793   FORMAT(I1,1X,I1,1X,I1,1X,I2,1X,I2,1X,F6.2,1X,F6.2)
      00    C
      00          INTALT(1,IFAC)=IRGALT
```

*** N04 ***

*** N05 ***

```
     *  0.15921700E-02,-0.16246378E+00, 0.16982712E-01, 0.43299995E-04,
     * -0.24700002E-03, 0.12069597E+01, 0.17500289E-01, 0.10409099E-02/
      DATA ((BAD(I,J,13),I=1,12),J=1,4)/
     *  0.36732789E-01,-0.19923900E-02,-0.88590011E-03, 0.37806993E-03,
     *  0.46429996E-04,-0.41235089E-02, 0.56539010E-03,-0.27699998E-05,
     * -0.89200003E-05, 0.12623239E-01,-0.26730006E-03, 0.11490000E-04,
     *  0.11040087E+01,-0.79453886E-01, 0.56303188E-01, 0.17077201E-02,
     *  0.16181599E-02,-0.17064410E+00, 0.19803409E-01, 0.20100000E-03,
     * -0.26381994E-03, 0.25955880E+00,-0.75969696E-02, 0.26727002E-03,
     *  0.31042399E-02, 0.15060000E-04,-0.77950000E-03, 0.18693000E-03,
     *  0.11030000E-04,-0.58944011E-03, 0.93650000E-04,-0.53000002E-06,
     * -0.15899996E-05, 0.19946101E-02,-0.24173000E-03, 0.19810002E-04,
     *  0.26041985E+01,-0.53603731E-01, 0.54826710E-01, 0.15170541E-01,
     *  0.20758000E-02,-0.21999305E+00, 0.24707809E-01, 0.63069994E-04,
     * -0.35096006E-03, 0.12119608E+01, 0.17200459E-01, 0.12504901E-02/
      DATA ((BAD(I,J,14),I=1,12),J=1,4)/
     *  0.27533840E-01,-0.15563599E-02, 0.40788017E-02, 0.91499996E-05,
     *  0.30790005E-04,-0.35172901E-02, 0.44818991E-03, 0.18999998E-06,
     * -0.56500003E-05, 0.89845918E-02,-0.49080001E-04, 0.56800000E-05,
     *  0.28853571E+00,-0.12315691E-01, 0.92407882E-01,-0.31504999E-02,
     *  0.16614000E-03, 0.70702210E-02, 0.46436000E-03, 0.14813000E-03,
     *  0.56589997E-04, 0.15976292E+00,-0.65233000E-02, 0.10359001E-03,
     * -0.23524901E-02,-0.19142000E-03,-0.22534500E-02, 0.92391996E-03,
     *  0.44479995E-04,-0.12658201E-02, 0.45565004E-03, 0.19199997E-05,
     * -0.76200004E-05, 0.19500700E-02,-0.32205996E-03, 0.32359996E-04,
     *  0.15483055E+01, 0.16585931E-01, 0.18629378E+00, 0.41712780E-01,
     *  0.10766699E-02,-0.23111541E-01, 0.18924981E-01, 0.16261000E-03,
     * -0.21463999E-03, 0.14692221E+01, 0.23637220E-01, 0.97246002E-03/
      DATA ((BAD(I,J,15),I=1,12),J=1,4)/
     *  0.26675239E-01,-0.14723700E-02, 0.33800800E-02, 0.89969995E-04,
     *  0.29100003E-04,-0.31962800E-02, 0.41041011E-03, 0.43800001E-05,
     * -0.43800001E-05, 0.88412911E-02,-0.75780001E-04, 0.42700003E-05,
     *  0.20974290E+00,-0.12848910E-01, 0.96859634E-01,-0.66359304E-02,
     *  0.18598999E-03, 0.21924630E-01,-0.15685901E-02, 0.27883006E-03,
     *  0.12293000E-03, 0.11387944E+00,-0.28685799E-02, 0.47189998E-04,
     *  0.96731004E-03,-0.52360003E-04,-0.75957994E-03, 0.69431006E-03,
     *  0.24389999E-04,-0.10261300E-02, 0.33395994E-03, 0.60000002E-06,
     * -0.44899998E-05, 0.19466300E-02,-0.21615000E-03, 0.20509993E-04,
     *  0.16613083E+01, 0.22728872E-01, 0.14670169E+00, 0.52854829E-01,
     *  0.12229299E-02,-0.31757951E-01, 0.22992261E-01, 0.47430003E-04,
     * -0.28821011E-03, 0.16162415E+01, 0.24095722E-01, 0.11892000E-02/
      DATA ((BAD(I,J,16),I=1,12),J=1,4)/
     *  0.44346619E-01,-0.22166700E-02, 0.68992004E-03, 0.13456000E-03,
     *  0.41330000E-04,-0.53420886E-02, 0.60573011E-03,-0.18299997E-05,
     * -0.96399999E-05, 0.13101950E-01,-0.24442002E-03, 0.81700000E-05,
     *  0.57665521E+00,-0.36277410E-01, 0.21571960E-01, 0.29442401E-02,
     *  0.63650007E-03,-0.52853432E-01, 0.69414489E-02,-0.17560000E-04,
     * -0.94470000E-04, 0.25530094E+00,-0.76948516E-02, 0.13530999E-03,
     *  0.14861882E-01,-0.72345999E-03,-0.44333003E-03, 0.32001990E-03,
     *  0.40309998E-04,-0.33075600E-02, 0.45425002E-03, 0.10399999E-05,
     * -0.76300003E-05, 0.34054599E-02,-0.50338008E-03, 0.38159997E-04,
     *  0.26140099E+01,-0.41381542E-01,-0.23107350E-01, 0.28863180E-01,
     *  0.21597000E-02,-0.25081253E+00, 0.32850400E-01,-0.49569993E-04,
     * -0.49582007E-03, 0.14941502E+01, 0.19196119E-01, 0.12189699E-02/
      DATA ((BAD(I,J,17),I=1,12),J=1,4)/
     *  0.26262619E-01,-0.11058000E-02, 0.13030299E-02, 0.63369996E-04,
     *  0.23860004E-04,-0.18674701E-02, 0.25699008E-03, 0.32999998E-06,
     * -0.31099999E-05, 0.10452788E-01,-0.19408000E-03, 0.67499996E-05,
     *  0.54005557E+00,-0.39594091E-01, 0.28321180E-01, 0.14426301E-02,
     *  0.70013991E-03,-0.57096951E-01, 0.73297806E-02, 0.53550000E-04,
     * -0.85880005E-04, 0.20601881E+00,-0.58017895E-02, 0.85580003E-04,
     *  0.11875998E-01,-0.72419993E-03,-0.77164010E-03, 0.27149008E-03,
     *  0.32509997E-04,-0.24936299E-02, 0.34106011E-03, 0.82000003E-06,
     * -0.53900003E-05, 0.29821601E-02,-0.36151009E-03, 0.26890004E-04,
     *  0.29064550E+01,-0.51300950E-01,-0.94466284E-02, 0.28370120E-01,
     *  0.23778100E-02,-0.25426775E+00, 0.33705089E-01,-0.59040001E-04,
```

```
*** N06 ***
   395.          00      122  WRITE(IFILE,28) EMIDLE(IP)
   396.          00      100  CONTINUE
   397.          00           RETURN
   398.          00           END
END ELT.  ERRORS: NONE. TIME:  0.672 SEC. IMAGE COUNT: 398

@HDG,P  ******  PREPRS  ******
```

*** N06 ***

```
      00          GO TO 35
      00       30 DUM=GREXP(IP)
      00          DO 34 II=1,10
      00          DUM=DUM*10.
      00          IF(DUM.LT.1.0) GO TO 34
      00          IDUM=DUM+1.
      00          EINTVL(IP)=IDUM/10.**(II+1)
      00          GO TO 35
      00       34 CONTINUE
      00       35 CONTINUE
      00C         INITIALIZE ARRAYS
      00          DO 46 IP=2,2
      00          DO 45 IC=1,10
      00          COMSUM(IC,IP,1)=0.
      00       45 CMNSUM(IC,IP,1)=0.
      00          EXPSUM(IP,1)=0.
      00       46 EXSQSM(IP)=0.
      00C
      00C         COMPUTE HISTOGRAM DATA AND AVERAGE AND STANDARD DEVIATION OF
      00C         PATHWAY EXPOSURE
      00          DO 60 IP=2,2
      00C
      00C         PRINT PATHWAY EXPOSURE LIST HEADING
      00          WRITE(IWRI,40)
      00       40 FORMAT(14X,13HEXPOSURE FROM,9X,13HEXPOSURE FROM, 66X,
     1 16HLAST AREA SOURCE,/,14X,15HPATHWAY SOURCES,4X,
     2 19HNON-PATHWAY SOURCES,5X,14HTOTAL EXPOSURE,5X,12HTOTAL TRAVEL,
     3 5X,17HAV. CONCENTRATION,6X,13HCONCENTRATION,/,2X,7HPATHWAY,4X,
     4 16H(GRAM SEC/CU. M),5X,16H(GRAM SEC/CU. M),6X,
     5 16H(GRAM SEC/CU. M),5X,10HTIME (SEC),8X,13H(GRAMS/CU. M),8X,
     6 13H(GRAMS/CU. M),/)
      00          DO 60 IPATH=1,NPATHS
      00          DO 50 IC=1,10
      00          IF(EXP(IPATH,IP,1).LE.IC*EINTVL(IP)) GO TO 51
      00       50 CONTINUE
      00       51 COMSUM(IC,IP,1)=COMSUM(IC,IP,1)+NCOMM(IPATH,1)
      00          CMNSUM(IC,IP,1)=CMNSUM(IC,IP,1)+NCOMP(IPATH,1)*TOTTT(IPATH,1)
      00          EXPSUM(IP,1)=EXPSUM(IP,1)+EXP(IPATH,IP,1)
      00          EXSQSM(IP)=EXSQSM(IP)+EXP(IPATH,IP,1)**2
      00          AVCONC(IP,IPATH,1)=EXP(IPATH,IP,1)/TOTTT(IPATH,1)
      00C         PRINT PATHWAY EXPOSURE AND SO FORTH
      00          WRITE(IWRI,55) IPATH,EXST(IPATH,IP,1),EXNPAM(IPATH,1,IP),EXP(
     1IPATH,IP,1),TOTTT(IPATH,1),AVCONC(IP,IPATH,1),CNPLST(IPATH,IP)
      00       55 FORMAT(5X,I2,9X,E10.3,11X,E10.3,12X,E10.3,8X, F10.2,9X,E10.3,
     1,2X,E10.3)
      00       60 CONTINUE
      00C         COMPUTE AVERAGE AND STANDARD DEVIATION OF EXPOSURES ON ALL PATH-
      00C         WAYS AND PRINT
      00          DO 62 IP=2,2
      00          STDEV=SQRT((1./NPATHS)*(EXSQSM(IP)-(EXPSUM(IP,1)**2)/NPATHS))
      00          EXPSUM(IP,1)=EXPSUM(IP,1)/NPATHS
      00       62 WRITE(IWRI,63) EXPSUM(IP,1),STDEV
      00       63 FORMAT(//////,2X,50HAVERAGE EXPOSURE FOR ALL PATHWAYS (GRAM SEC/CU
     1. M),E10.3,/,2X,55HSTANDARD DEVIATION OF PATHWAY EXPOSURE (GRAM SE
     2C/CU. M),E10.3,/////)
      00C         COMPUTE REST OF HISTOGRAM DATA
      00          DO 67 IP=2,2
      00          TOTCOM=0.
      00          TOTCMN=0.
      00          DO 65 IC=1,10
      00          TOTCOM=TOTCOM+COMSUM(IC,IP,1)
      00       65 TOTCMN=TOTCMN+CMNSUM(IC,IP,1)
      00          DO 66 IC=1,10
      00          COMSUM(IC,IP,1)=(COMSUM(IC,IP,1)/TOTCOM)*100.
      00       66 CMNSUM(IC,IP,1)=CMNSUM(IC,IP,1)/TOTCMN
      00       67 CONTINUE
```

*** NO7 ***

```
*** N08 ***                                                    *** N08 ***
   196.          00
   197.          00
   198.          00
   199.          00
   200.          00
   201.          00
   202.          00
   203.          00
   204.          00
   205.          00
   206.          00
   207.          00
   208.          00
   209.          00      9M                                        1
END ELT.  ERRORS: NONE. TIME:  0.744 SEC. IMAGE COUNT: 209

@HDG,P  ******  TAPEFILE6  ******
```

```
*** 001 ***                                                                                                    *** 001 ***
   263.          00              CFRET(IX,IP,IMODE) = EXP(ATR(INDX,IP,IM) +                                     00073200
   264.          00             *  BTR(INDX,IP,IM)*SPAV + CTR(INDX,IP,IM)*SPAV*SPAV)                          00073300
   265.          00      C                                                                                     00073400
   266.          00              GO TO 688                                                                      00073500
   267.          00      720     CONTINUE                                                                       00073600
   268.          00      C                                                                                     00073700
   269.          00              CFRET(IX,IP,IMODE) = ATR(INDX,IP,IM) + BTR(INDX,IP,IM)*SPAV                   00073800
   270.          00      C                                                                                     00073900
   271.          00      688     CONTINUE                                                                       00074000
   272.          00      C                                                                                     00074100
   273.          00              IF(TRKFLG.EQ.1) CFRET(IX,IP,IMODE) = CFRET(IX,IP,IMODE)*                       00074200
   274.          00             *                                     TRKRET(IX,IP,IM)                        00074300
   275.          00      C                                                                                     00074400
   276.          00      700     CONTINUE                                                                       00074500
   277.          00              RETURN                                                                         00074600
   278.          00      C                                                                                     00074700
   279.          00      C       DEBUG SUBCHK                                                                   00074800
   280.          00              END                                                                            00074900

END ELT.  ERRORS: NONE.  TIME:  0.813 SEC.  IMAGE COUNT: 280

@HDG,P  ******  BLKDAT  ******
```

```
*** 002 ***                                                                    *** 002 ***
@ELT,L CEM.DATA1
ELT 8R1 S7401C 04/23/82 15:44:48 (0)
     1.          00      1P TEST 1A              750101 1 1 1 1 0 0 2
     2.          00      2P                                                  76003004008008010
     3.          00      3P 21 21 27 75 75  0  0 2.5-2.5
     4.          00      4P 21 21 21 21 15 21 21 21 21 15 27 27 27 27 10
     5.          00      5P 21 21 21 21 15 21 21 21 21 15 27 27 27 27 10

END ELT.  ERRORS: NONE. TIME:  0.205 SEC. IMAGE COUNT: 5

@HDG,P  ******  DATA2  ******
```

```
*** 003 ***                                                                    *** 003 ***
     65.          00     C
     66.          00     C
     67.          00     C      MODEL IS IN SHORT-TERM MODE
     68.          00     C
     69.          00     C
     70.          00     C
     71.          00     C      ARE NON-CBD PATHWAY EMISSION FACTORS TO BE COMPUTED
     72.          00     C
     73.          00      50    IAMPM=1
     74.          00            IAC=IACS
     75.          00            ITEMP=ITEMPS
     76.          00            IF(LPATH.EQ.2) GO TO 60
     77.          00     C
     78.          00     C      COMPUTE NON-CBD PATHWAY EMISSION FACTORS
     79.          00     C
     80.          00            ILOOP=3
     81.          00     C      100 PC WARM OPERATION
     82.          00            INCC=0
     83.          00            ICH=0
     84.          00            ICC=0
     85.          00            CALL MOBLE1(IAMPM,INITFL,CY)
     86.          00            CALL OUTPUT(CY)
     87.          00     C
     88.          00     C
     89.          00     C      ARE NON-PATHWAY EMISSION FACTORS TO BE COMPUTED
     90.          00     C
     91.          00      60    IF(LNPATH.EQ.2) GO TO 100
     92.          00     C
     93.          00     C      COMPUTE NON-PATHWAY EMISSION FACTORS
     94.          00     C
     95.          00            ILOOP=4
     96.          00            CALL MOBLE1(IAMPM,INITFL,CY)
     97.          00            CALL OUTPUT(CY)
     98.          00      100   CONTINUE
     99.          00            RETURN
    100.          00            END
END ELT.  ERRORS: NONE. TIME:  0.304 SEC. IMAGE COUNT: 100

@HDG,P  ******  GETCUM  ******
```

```
*** 004 ***                                                                                                    *** 004 ***
  131.          00            INTALT(2,IFAC)=IMDALT
  132.          00            INTALT(3,IFAC)=IPLALT
  133.          00            INTALT(4,IFAC)=MYFRST
  134.          00            INTALT(5,IFAC)=MYLAST
  135.          00            R&ALT(1,IFAC)=BASNEW
  136.          00            R&ALT(2,IFAC)=DELNEW
  137.          00      C
  138.          00      800   CONTINUE
  139.          00      810   CONTINUE
  140.          00      C                                                                                     00012800
  141.          00      C**HERE READ IN INSP./MAINT. PARAMS                                                   00012900
  142.          00            IF(IMFLG.EQ.0) GO TO 900                                                        00013000
  143.          00            IF(IPROMT.EQ.1) WRITE(IWRI,772)                                                 00013200
  144.          00      772   FORMAT('0ENTER YEAR I/M BEGINS, STRINGENCY, M.T. FLAG,'
  145.          00           *  'FIRST MODEL YEAR AND LAST MODEL YEAR OF PROG BENEFITS'/
  146.          00           *   'FORMAT I2,1X,I2,1X,I1,2(1X,I2)' )
  147.          00            IF(INFLAG.EQ.0)                                                                 00013300
  148.          00      C     *READ(IREAD,729) ICYIM,ISTRIN,IMTF_G,MODYR1,MODYR2                              00013400
  149.          00      C      IF(INFLAG.EQ.1)                                                                00013700
  150.          00            *READ(IREAD,729) ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2                              00013800
  151.          00            IF(INFLAG.NE.1) GO TO 900
  152.          00            ICYIM=IMYEAR
  153.          00            ISTRIN=IMSTRG
  154.          00            IMTFLG=IMMECH
  155.          00            MODYR1=IMBEG
  156.          00            MODYR2=IMEND
  157.          00      900   CONTINUE                                                                        00013500
  158.          00      C                                                                                     00013600
  159.          00      729    FORMAT(I2,1X,I2,1X,I1,2(1X,I2))
  160.          00      C                                                                                     00013800
  161.          00            CALL TFCALX                                                                     00013900
  162.          00      C                                                                                     00014000
  163.          00            RETURN                                                                          00014100
  164.          00      C                                                                                     00014200
  165.          00      C*************************************************************************************00014300
  166.          00      C
  167.          00      C**READ E.F. CALCULATION INPUT PARAMETERS                                             00014400
  168.          00      C                                                                                     00014500
  169.          00      500   CONTINUE                                                                        00014600
  170.          00      C                                                                                     00014700
  171.          00            IRDFLG = 1                                                                      00014800
  172.          00      C                                                                                     00014900
  173.          00            IF(IPROMT.EQ.1.AND.SP3FLG.EQ.0) WRITE(IWRI,767)                                 00015000
  174.          00      767   FORMAT('0ENTER REGION, CY,SPD(1),TEMP,PCCO,PCHS,PCCC: '/                        00015100
  175.          00           *  'FORMAT I1,1X,I2,1X,F4.1,1X,F2.0,3(1X,F5.2)'/)                                00015200
  176.          00            IF(IPROMT.EQ.1.AND.SP3FLG.EQ.1) WRITE(IWRI,768)                                 00015300
  177.          00      768   FORMAT('0ENTER REGION, CY,SPD(3),TEMP,PCCO,PCHS,PCCC: '/                        00015400
  178.          00           * 'FORMAT I1,1X,I2,'  3(1X,F4.1),1X,F2.0,3(1X,F5.2)')
  179.          00      724   FORMAT(I1,1X,I2,'  3(1X,F4.1),1X,F2.0,3(1X,F5.2))
  180.          00      C                                                                                     00015500
  181.          00            IF(SP3FLG.EQ.0.AND.INFLAG.EQ.0)                                                 00015600
  182.          00           1READ(IREAD,725)IREJN,CY,SP1,TEMP,PCCO,PCHS,PCCC
  183.          00      C     IF(EOF(IREAD),EQ.1.0) GO TO 99
  184.          00            IF(SP3FLG.EQ.1.AND.INFLAG.EQ.0)                                                 00015800
  185.          00           1READ(IREAD,724) IREJN,CY,SPD,TEMP,PCCO,PCHS,PCCC
  186.          00      C     IF(EOF(IREAD),EQ.1.0) GO TO 99
  187.          00            IF(SP3FLG.EQ.1.AND.INFLAG.EQ.1)                                                 00020600
  188.          00           1READ(IREAD,724) IREJN,CY,SPD,TEMP,PCCO,PCHS,PCCC
  189.          00      C     IF(EOF(IREAD),EQ.1.0) GO TO 99
```

```
*** 005 ***
   263.          00          * -0.51394990E-03, 0.16673622E+01, 0.15416130E-01, 0.13155600E-02/
   264.          00           DATA ((BAD(I,J,18),I=1,12),J=1,6)/
   265.          00          *  0.80684014E-02,-0.40020002E-03, 0.90040010E-03, 0.65000000E-04,
   266.          00          *  0.66000002E-05,-0.73569990E-03, 0.89800000E-04,-0.30000001E-06,
   267.          00          * -0.60000002E-06, 0.53815991E-02,-0.14550000E-03, 0.19999998E-05,
   268.          00          *  0.21578521E+00,-0.12577798E-01, 0.51477298E-01,-0.23425999E-02,
   269.          00          *  0.16780000E-03,-0.15755999E-02, 0.28229994E-03, 0.12599999E-03,
   270.          00          *  0.48500006E-04, 0.11655778E+00,-0.46298688E-02, 0.69899994E-04,
   271.          00          *  0.10816000E-01,-0.12250000E-02,-0.73540001E-03, 0.53939992E-03,
   272.          00          *  0.44400013E-04,-0.32972000E-02, 0.52660005E-03, 0.31199997E-05,
   273.          00          * -0.84000013E-05, 0.26507999E-02,-0.35370002E-03, 0.23400004E-04,
   274.          00          *  0.22840490E+01,-0.26279990E-01, 0.65590084E-01, 0.53922199E-01,
   275.          00          *  0.21289000E-02,-0.16557119E+00, 0.30231102E-01,-0.90100002E-04,
   276.          00          * -0.41270000E-03, 0.14689569E+01, 0.70669018E-02, 0.16137001E-02/
   277.          00            DO 2 I=1,20
   278.          00        2   FMOJY(I)=TF(21-I,1)
   279.          00            DO 5 I1=1,2
   280.          00            DO 5 I2=1,4
   281.          00            DO 5 I3=1,6
   282.          00            EMAD1(I1,I2,I3)=0.0
   283.          00          5 EMCR1(I1,I2,I3)=0.0
   284.          00            DO 7000 IBLIP=MODRUN,2
   285.          00            ITIME=!BLIP
   286.          00            IF(MODRUN.EQ.2) ITIME=1
   287.          00            MAXCY=CY
   288.          00            IF(MAXCY.LT.70) GO TO 1100
   289.          00            DO 1000 I5=1,6
   290.          00            A=ACCEL
   291.          00            DO 1010 NPASS=1,2
   292.          00            V=I5*5.0
   293.          00            DO 20 I1=1,20
   294.          00            DO 10 I2=1,4
   295.          00            EMAD(I1,I2)=0.0
   296.          00         10 EMCRU.(I1,I2)=0.0
   297.          00         20 CONTINUE
   298.          00            AMAX=1.0
   299.          00            AMIN=-1.2
   300.          00            A1=-1.0/AMAX
   301.          00            A2=-1.0/AMIN
   302.          00            IF(A.EQ.0.) GO TO 200
   303.          00            T=ABS(V/A)
   304.          00            ABSA=ABS(A)
   305.          00            AA=A*A
   306.          00            TT=T*T
   307.          00            X(1)=T
   308.          00            X(2)=ABSA*TT/2.
   309.          00            X(3)=A*T
   310.          00            X(4)=ABSA*A*TT/2.
   311.          00            X(5)=AA*TT*T/3.
   312.          00            X(6)=AA*T
   313.          00            X(7)=ABSA*AA*TT/2.
   314.          00            X(8)=AA*A*TT*T/3.
   315.          00            X(9)=AA*AA*TT*T/3.
   316.          00            X(10)=X(1)
   317.          00            X(11)=X(2)
   318.          00            X(12)=X(5)
   319.          00            IF(A.GE.AMAX) HOA=0.
   320.          00            IF(A.LE.AMIN) HOA=0.
   321.          00            IF(A.GE.0.0.AND.A.LT.AMAX) HOA=(A1*A)+1.0
   322.          00            IF(A.LE.0.0.AND.A.GT.AMIN) HOA=(A2*A)+1.0
   323.          00            SUM=0.0000
```

```
@ELT,L CEM.PREPRS
ELT 8R1 S7491C 04/23/82 15:45:18 (0)
      1.          00      C       PROGRAM PREPRS (INPUT,OUTPUT,TAPE5=INPUT,TAPE6=OUTPUT,TAPE8)
      2.          00      C
      3.          00      C
      4.          00      C                 THIS PROGRAM IS AN EMISSIONS PREPROCESSOR FOR
      5.          00      C                 PROGRAM COMMEX
      6.          00      C
      7.          00      C
      8.          00      C       IT INTERFACES WITH THE EPA MOBILE SOURCE EMISSION FACTOR PROGRAM
      9.          00      C       MOBILE1 (WITH SOME MINOR CHANGES TO MOBILE1) TO PRODUCE TABLES
     10.          00      C       OF EMISSION FACTORS TO BE USED BY PROGRAM COMMEX IN COMPUTING NON-
     11.          00      C       CBD PATHWAY CO EMISSION RATES AND CO EMISSION RATES ARISING FROM
     12.          00      C       NON-PATHWAY SOURCES
     13.          00      C       IT ALSO COMPUTES TABLES OF EMISSION FACTORS, USING AN ADAPTATION
     14.          00      C       OF THE EPA MODAL MODEL, TO BE USED BY PROGRAM COMMEX IN COMPUTING
     15.          00      C       CBD PATHWAY CO EMISSION RATES.  FACTORS TO CORRECT MODAL EMISSIONS
     16.          00      C       FOR TEMPERATURE/COLD STARTS, CALENDAR YEAR, AND VEHICLE TYPE
     17.          00      C       DISTRIBUTIONS ARE ALSO GENERATED (USING PARTS OF MOBILE1) AND
     18.          00      C       STORED IN TABLES
     19.          00      C
     20.          00      C
     21.          00              COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     22.          00             1IACS
     23.          00              INTEGER CY
     24.          00              DATA INITFL/1/                                                  00001700
     25.          00      C
     26.          00      C
     27.          00      C       READ AND EDIT BASIC VARIABLES
     28.          00      C
     29.          00              CALL INPT(ACCEL,DECEL,CY)
     30.          00      C
     31.          00      C
     32.          00      C       COMPUTE, PRINT, AND CREATE A FILE OF NON-CBD PATHWAY AND NON-
     33.          00      C       PATHWAY SOURCE EMISSION FACTORS
     34.          00      C
     35.          00              CALL FTP(INITFL,CY)
     36.          00      C
     37.          00      C
     38.          00      C       COMPUTE AND PRINT
     39.          00      C                         TEMPERATURE/COLD START CORRECTION FACTORS
     40.          00      C                         LDV TO COMPOSITE EMISSIONS CORRECTION FACTORS
     41.          00      C                         AIR CONDITIONING CORRECTION FACTORS
     42.          00      C       FOR CBD PATHWAY EMISSIONS (MODAL)
     43.          00      C
     44.          00              IF(LPATH.EQ.2) GO TO 10
     45.          00              CALL CORFAC(INITFL,CY)
     46.          00      C
     47.          00      C
     48.          00      C       COMPUTE, PRINT, AND CREATE A FILE OF CBD PATHWAY EMISSION FACTORS
     49.          00      C       (MODAL)
     50.          00      C
     51.          00              CALL MODMOD (ACCEL,DECEL,CY)
     52.          00       10     CONTINUE
     53.          00              END
     54.          00              SUBROUTINE INPT(ACCEL,DECEL,CY)
     55.          00      C
     56.          00      C
     57.          00      C       THIS SUBROUTINE READS AND EDITS THE INPUT DATA NEEDED BY THE
     58.          00      C       EMISSIONS PREPROCESSOR
     59.          00      C
     60.          00      C
     61.          00              COMMON/PRE1/CMEAN(10),IAC,ITEMP,INCC,ICH,ICC,/OUPT
```

```
*** 007 ***                                                                                                                *** 007 ***
   131.          00              DO 71 IP=2,2
   132.          00        C     PRINT HISTOGRAM DATA HEADINGS AND DATA
   133.          00              WRITE(IWRI,70)
   134.          00         70   FORMAT(17X,12HVALUE LIMITS,9X,17HPERCENT COMMUTERS,5X,27HPROBABILI
   135.          00             1TY OF EXPERIENCING,/,2X,5HCLASS,8X,16H(GRAM SEC/CU. M),12X,8HIN CL
   136.          00             2ASS,15X,14HEXPOSURE CLASS,/)
   137.          00              DO 71 IC=1,10
   138.          00              V1=(IC-1)*EINTVL(IP)
   139.          00              V2=V1+EINTVL(IP)
   140.          00         71   WRITE(IWRI,72) IC,V1,V2,COMSUM(IC,IP,1),CMNSUM(IC,IP,1)
   141.          00         72   FORMAT(3X,I2,6X,E10.3,2H -,E10.3,11X,F4.0,23X,F5.3)
   142.          00              RETURN
   143.          00              END

END ELT.  ERRORS: NONE. TIME:  0.379 SEC. IMAGE COUNT: 143

@HDG,P  ******  SPFCLX  ******
```

```
*** 008 ***                                                                  *** 008 ***
@ELT,L CEM.TAPEFILE6
ELT ART $7401C 04/23/82 15:45:31 (0)
 SI IS NOT SIR TYPE $DF *[F33[333333
    1.          00      1P TEST 6                  800101 1 2 1 1 0 0 0
    2.          00      3P 21 21 27 75  0 2.5-2.5
    3.          00      4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.201 SEC. IMAGE COUNT: 3

@HDG,P  ******  TAPEFILE7  ******
```

```
*** A01 ***
@US*ER.FLIST,ET CEM.
FLIST  04/23/82   15:44:34
END FLIST  108 CARDS GENERATED.


@PRT,TCL CEM.
FURPUR 28R1 U1 E36 74R1T2 04/23/82 15:44:36

CO*CEM(1)    ELEMENT TABLE

D  NAME          VERSION     TYPE          DATE          TIME      SEQ #  SIZE-PRE,TEXT (CYCLE WORD) PSRMODE  LOCATION
   ALUH                     ELT SYMB   28 AUG 80   15:49:01          1             45     5    0    1             1792
   BEFGEN                   ELT SYMB   28 AUG 80   12:47:47          2             47     5    0    1             1837
   BIGCFX                   ELT SYMB   28 AUG 80   12:39:54          3            150     5    0    1             1884
   BLKDAT                   ELT SYMB   02 SEP 80   15:40:09          4            247     5    0    1             2034
   CCEVAX                   ELT SYMB   28 AUG 80   15:49:28          5             21     5    0    1             2281
   CORFAC                   ELT SYMB   28 AUG 80   12:22:54          6             24     5    0    1             2302
   DATA1                    ELT SYMB   03 SEP 80   10:28:13          7              2     5    0    1             2326
   DATA2                    ELT SYMB   02 SEP 80   16:45:[illegible]  8              1     5    0    1             2328
   DATA3                    ELT SYMB   04 SEP 80   12:15:06          9              2     5    0    1             2329
   EFALTX                   ELT SYMB   28 AUG 80   15:45:55         10              8     5    0    1             2331
   EFCALX                   ELT SYMB   28 AUG 80   15:38:27         11             48     5    0    1             2339
   FTP                      ELT SYMB   28 AUG 80   15:21:03         12             18     5    0    1             2387
   GETCUM                   ELT SYMB   28 AUG 80   15:46:50         13             25     5    0    1             2405
   INITEX                   ELT SYMB   28 AUG 80   15:43:46         14              8     5    0    1             2430
   INPUT                    ELT SYMB   02 SEP 80   14:00:39         15            136     5    0    1             2438
   LDVIMX                   ELT SYMB   28 AUG 80   15:51:43         16             33     5    0    1             2574
   MOBLE1                   ELT SYMB   28 AUG 80   15:27:00         17             42     5    0    1             2607
   MODMOD                   ELT SYMB   28 AUG 80   15:24:50         18            149     5    0    1             2649
   OUTPUT                   ELT SYMB   28 AUG 80   15:29:16         19             91     5    0    1             2798
   PREPRS                   ELT SYMB   02 SEP 80   16:12:35         20             55     5    0    1             2889
   SPFCLX                   ELT SYMB   28 AUG 80   15:42:48         21             47     5    0    1             2944
   TFCALX                   ELT SYMB   28 AUG 80   15:44:57         22             10     5    0    1             2991
   TRKOPC                   ELT SYMB   28 AUG 80   15:41:38         23             21     5    0    1             3001
   ART                      ELT SYMB   05 SEP 80   14:27:43         24             21     5    0    1             3022
   DISPRS                   ELT SYMB   03 SEP 80   15:26:51         25             24     5    0    1             3043
   EMISS                    ELT SYMB   04 SEP 80   12:08:00         26             41     5    0    1             3067
   GRAF                     ELT SYMB   03 SEP 80   14:57:02         27             37     5    0    1             3108
   MODE                     ELT SYMB   05 SEP 80   14:31:05         28             28     5    0    1             3145
   NPATHD                   ELT SYMB   04 SEP 80   13:37:19         29             36     5    0    1             3173
   NPATHE                   ELT SYMB   03 SEP 80   15:21:57         30             18     5    0    1             3209
   ROAD                     ELT SYMB   04 SEP 80   12:04:41         31             61     5    0    1             3227
   SHORTY                   ELT SYMB   04 SEP 80   10:59:55         32             36     5    0    1             3288
   STREET                   ELT SYMB   03 SEP 80   16:22:23         33              8     5    0    1             3324
   PREPRS                   RELOCATABLE 28 MAY 81  12:56:07         34      4      48                  QTR      3332
   FTP                      RELOCATABLE 28 MAY 81  12:56:08         35      2      13                  QTR      3384
   CORFAC                   RELOCATABLE 28 MAY 81  12:56:10         36      3      17                  QTR      3399
   MODMOD                   RELOCATABLE 28 MAY 81  12:56:17         37      3      99                  QTR      3419
   OUTPUT                   RELOCATABLE 28 MAY 81  12:56:25         38      4     154                  QTR      3521
   INPUT                    RELOCATABLE 28 MAY 81  12:56:28         39      4      70                  QTR      3679
   EFCALX                   RELOCATABLE 28 MAY 81  12:56:30         40      3      22                  QTR      3753
   BIGCFX                   RELOCATABLE 28 MAY 81  12:56:32         41      4     145                  QTR      3778
   TRKOPC                   RELOCATABLE 28 MAY 81  12:56:33         42      2      10                  QTR      3927
   SPFCLX                   RELOCATABLE 28 MAY 81  12:56:34         43      2      21                  QTR      3939
   INITEX                   RELOCATABLE 28 MAY 81  12:56:35         44      2       2                  QTR      3962
   TFCALX                   RELOCATABLE 28 MAY 81  12:56:37         45      2       4                  QTR      3966
   EFALTX                   RELOCATABLE 28 MAY 81  12:56:38         46      2      10                  QTR      3972
   GETCUM                   RELOCATABLE 28 MAY 81  12:56:39         47      2      10                  QTR      3984
   BEFGEN                   RELOCATABLE 28 MAY 81  12:56:41         48      3      26                  QTR      3996
   ALUH                     RELOCATABLE 28 MAY 81  12:56:42         49      3      19                  QTR      4025
   CCEVAX                   RELOCATABLE 28 MAY 81  12:56:43         50      2      40                  QTR      4046
   LDVIMX                   RELOCATABLE 28 MAY 81  12:56:45         51      2      18                  QTR      4088
   BLKDAT                   RELOCATABLE 28 MAY 81  12:56:51         52      3     253                  QTR      4108
   ART                      RELOCATABLE 28 MAY 81  12:57:07         53      4      39                  QTR      4364
   MODE                     RELOCATABLE 28 MAY 81  12:57:09         54      4      42                  QTR      4397
   EMISS                    RELOCATABLE 28 MAY 81  12:57:11         55      4      43                  QTR      4443
```

*** A02 ***

```
      1.          00            BLOCK DATA                                                                  00131900
      2.          00      C                                                                                 00132000
      3.          00            COMMON/INDXCM/INDX49,INDXCA,INDXHI
      4.          00            COMMON/BASECM/BASE49,BASECA,BASEHI
      5.          00            COMMON/DELCOM/DEL49,DELCA,DELHI
      6.          00            COMMON/IDLBCM/IDLB49,IDLBCA,IDLBHI
      7.          00            COMMON/IDLDCM/IDEL49,IDELCA,IDELHI
      8.          00            COMMON/MYMCOM/MYM,MYR,TF
      9.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,FCCC,MS
     10.          00            COMMON/IMCRED/PCIMHN,PCIMHY,PCIMCN,PCIMCY
     11.          00
     12.          00            INTEGER DUM1(190),DUM2(190),DUM3(190),DUM4(190),DUM5(190),
     13.          00           1DUM6(190),DUM7(190),DUM8(190)
     14.          00
     15.          00            REAL SPD(3),MS(6),MYM(20,6),MYR(20,6),TF(20,6)
     16.          00            INTEGER INDX49(30,3,6),INDXCA(30,3,6),INDXHI(30,3,6)
     17.          00            REAL BASE49(10,3,6),BASECA(10,3,6),BASEHI(10,3,6)
     18.          00            REAL DEL49(10,3,6),DELCA(10,3,6),DELHI(10,3,6)
     19.          00            REAL IDLB49(10,3,6),IDLBCA(10,3,6),IDLBHI(10,3,6)
     20.          00            REAL IDEL49(10,3,6),IDELCA(10,3,6),IDELHI(10,3,6)
     21.          00            INTEGER PCIMHN(19,5,4),PCIMHY(19,5,4),PCIMCN(19,5,4),
     22.          00           *  PCIMCY(19,5,4)
     23.          00            EQUIVALENCE (DUM1(1),PCIMHN(1,1,1)),(DUM2(1),PCIMHN(1,1,3))
     24.          00            EQUIVALENCE (DUM3(1),PCIMHY(1,1,1)),(DUM4(1),PCIMHY(1,1,3))
     25.          00            EQUIVALENCE (DUM5(1),PCIMCN(1,1,1)),(DUM6(1),PCIMCN(1,1,3))
     26.          00            EQUIVALENCE (DUM7(1),PCIMCY(1,1,1)),(DUM8(1),PCIMCY(1,1,3))
     27.          00
     28.          00      C                                                                                 00138700
     29.          00      C                                                                                 00139500
     30.          00      C**DEFAULT MODAL SPLIT                                                            00139600
     31.          00            DATA MS/.803,.058,.058,.045,.031,.005/                                      00139700
     32.          00      C                                                                                 00139800
     33.          00      C**ANNUAL AVERAGE MILEAGE ACCUMULATION (DIVIDED BY 100000)                        00139900
     34.          00            DATA MYM/                                                                   00140000
     35.          00           *0.159,0.150,0.140,0.131,0.122,0.113,0.103,0.094,0.085,0.076,                00140100
     36.          00           *0.067,0.066,0.062,0.059,0.055,0.051,0.050,0.047,0.044,0.044,                00140200
     37.          00           *0.159,0.150,0.140,0.131,0.122,0.113,0.103,0.094,0.085,0.076,                00140300
     38.          00           *0.067,0.066,0.062,0.059,0.055,0.051,0.050,0.047,0.044,0.044,                00140400
     39.          00           *0.157,0.157,0.141,0.126,0.113,0.102,0.094,0.086,0.080,0.075,                00140500
     40.          00           *0.071,0.066,0.063,0.060,0.055,0.052,0.050,0.047,0.044,0.041,                00140600
     41.          00           *0.190,0.190,0.179,0.165,0.150,0.135,0.120,0.106,0.095,0.086,                00140700
     42.          00           *0.078,0.070,0.063,0.059,0.053,0.049,0.047,0.046,0.044,0.042,                00140800
     43.          00           *0.736,0.736,0.699,0.633,0.566,0.500,0.456,0.412,0.382,0.360,                00140900
     44.          00           *0.346,0.338,0.331,0.324,0.309,0.287,0.257,0.213,0.184,0.154,                00141000
     45.          00           *.0201,.0251,.0207,.0185,.0172,.0162,.0155,.0149,.0143,.0139,                00141100
     46.          00           *.0135,.0132,.0129,.0127,.0125,.0123,.0122,.0121,.0120,.0119/                00141200
     47.          00      C                                                                                 00141300
     48.          00      C**VEHICLE REGISTRATION DISTRIBUTIONS                                             00141400
     49.          00            DATA MYR/                                                                   00141500
     50.          00           *0.075,0.107,0.107,0.106,0.100,0.092,0.085,0.077,0.066,0.052,                00141600
     51.          00           *0.039,0.027,0.018,0.014,0.009,0.006,0.005,0.005,0.005,0.004,                00141700
     52.          00           *0.061,0.095,0.094,0.103,0.083,0.076,0.076,0.063,0.054,0.043,                00141800
     53.          00           *0.036,0.024,0.030,0.028,0.026,0.024,0.022,0.020,0.018,0.016,                00141900
     54.          00           *0.037,0.070,0.078,0.086,0.075,0.075,0.075,0.068,0.059,0.053,                00142000
     55.          00           *0.044,0.032,0.038,0.036,0.034,0.032,0.030,0.028,0.026,0.024,                00142100
     56.          00           *0.037,0.070,0.078,0.086,0.075,0.075,0.075,0.068,0.059,0.053,                00142200
     57.          00           *0.044,0.032,0.038,0.036,0.034,0.032,0.030,0.028,0.026,0.024,                00142300
     58.          00           *0.077,0.135,0.134,0.131,0.099,0.090,0.082,0.062,0.049,0.033,                00142400
     59.          00           *0.025,0.015,0.013,0.011,0.010,0.008,0.007,0.006,0.005,0.004,                00142500
     60.          00           *0.105,0.225,0.206,0.149,0.097,0.062,0.046,0.033,0.029,0.023,                00142600
     61.          00           *0.008,0.005,0.013,0.0   ,0.0   ,0.0   ,0.0   ,0.0   ,0.0   ,0.0   /       00142700
     62.          00      C                                                                                 00142800
     63.          00      C                                                                                 00143900
     64.          00      C     6 6 6 6 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9                     00144000
```

```
*** A03 ***
@ELT,L CEM.DATA2
ELT 8R1 S7491C 04/23/82 15:44:49 (0)
     1.          00     1P TEST1                    781215 1 2 1 1 0 0 0
     2.          00     3P   0  0  0 73  02,5 -2.5
     3.          00     4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.201 SEC. IMAGE COUNT: 3

@HDG,P  ******  DATA3  ******
```

```
@ELT,L  CEM.GETCUM
ELT 8R1 $7401C 04/23/82 15:44:55 (C)
    1.          00          SUBROUTINE GETCUM(CUMMIL)                                                    00100600
    2.          00      C                                                                                00100700
    3.          00          COMMON/MYMCOM/MYMDUM,MYR,TF                                                  00100800
    4.          00      C                                                                                00100900
    5.          00          REAL CUMMIL(20,6),MYM(20,6),MYMDUM(20,6),MYR(20,6),TF(20,6)                  00101000
    6.          00          REAL FRAC(4,6)                                                               00101100
    7.          00          DATA FRAC/                                                                   00101200
    8.          00         *          .75  , .375 , .25  , .875 ,                                        00101300
    9.          00         *          .75  , .375 , .25  , .875 ,                                        00101400
   10.          00         *          .75  , .375 , .25  , .875 ,                                        00101500
   11.          00         *          .50  , .25  , .50  , .75  ,                                        00101600
   12.          00         *          .50  , .25  , .50  , .75  ,                                        00101700
   13.          00         *          .50  , .25  , .50  , .75   /                                       00101800
   14.          00      C                                                                                00101900
   15.          00          DO 10 I1=1,6                                                                 00102000
   16.          00          DO 10 I2=1,20                                                                00102100
   17.          00      10  MYM(I2,I1) = MYMDUM(I2,I1)*100000.                                           00102200
   18.          00      C                                                                                00102300
   19.          00          DO 100 IM=1,6                                                                00102400
   20.          00             CUMMIL(1,IM)=MYM(1,IM)*FRAC(2,IM)                                         00102500
   21.          00          DO 90 I=2,20                                                                 00102600
   22.          00             SUM=0                                                                     00102700
   23.          00             SUM2=0.                                                                   00102800
   24.          00             II=I-1                                                                    00102900
   25.          00          DO 80 J=1,II                                                                 00103000
   26.          00      80  SUM=SUM+MYM(J,IM)                                                           00103100
   27.          00             III=II-1                                                                  00103200
   28.          00             IF(III.EQ.0) GO TO 74                                                     00103300
   29.          00          DO 70 L=1,III                                                                00103400
   30.          00      70  SUM2=SUM2+MYM(L,IM)                                                          00103500
   31.          00      C                                                                                00103600
   32.          00      74  CONTINUE                                                                     00103700
   33.          00             T1=SUM+MYM(I,IM)*FRAC(2,IM)                                               00103800
   34.          00             T2=SUM2+MYM(II,IM)*FRAC(4,IM)                                             00103900
   35.          00             T1=T1*FRAC(1,IM)                                                          00104000
   36.          00             T2=T2*FRAC(3,IM)                                                          00104100
   37.          00             TSUM=T1+T2                                                                00104200
   38.          00      90  CUMMIL(I,IM)=TSUM                                                           00104300
   39.          00      100 CONTINUE                                                                     00104400
   40.          00      C                                                                                00104500
   41.          00      C                                                                                00104600
   42.          00          RETURN                                                                       00104700
   43.          00      C                                                                                00104800
   44.          00      C   DEBUG SUBCHK                                                                00104900
   45.          00          END                                                                          00105000

END ELT.  ERRORS: NONE. TIME:  0.279 SEC. IMAGE COUNT: 45

@HDG,P  ******  GRAF  ******
```

*** A05 ***

```
      PCCC=ICC
C     IF(EOF(IREAD).EQ.1.0) GO TO 99
C
725   FORMAT(I1,1X,I2,1X,F4.1,1X,F2.0,3(1X,F5.2))                       00016000
C
C**CHECK CALENDAR YEAR                                                   00016200
 7725 IF(CY.GE.70) GO TO 505                                             00016300
      WRITE(IWRI,785)                                                    00016400
785   FORMAT(' ***ERROR: CALENDAR YEAR RANGE IS 70 THRU 99')             00016500
      STOP                                                               00016600
505   CONTINUE                                                           00016700
      ICYPR = CY                                                         00016800
      IF(CY.GT.95) CY = 95                                               00016900
C                                                                        00017000
C**CHECK AMBIENT TEMPERATURE                                             00017100
      IF(TEMP.GE.0.0.AND.TEMP.LE.110.) GO TO 697                         00017200
      WRITE(IWRI,787)                                                    00017300
787   FORMAT(' ***ERROR: VALID TEMPERATJRE RANGE IS 0-110 DEG.(F)')      00017400
      STOP                                                               00017500
697   CONTINUE                                                           00017600
C                                                                        00017700
C**CHECK INPUT SPEED(S)                                                  00017800
      IF(SP3FLG.EQ.1) GO TO 650                                          00017900
      IF(SP1.GT.0.) GO TO 620                                            00018000
      WRITE(IWRI,786)                                                    00018100
786   FORMAT(' ***ERROR: SPEED MUST BE POSITIVE')                        00018200
      STOP                                                               00018300
620   IF(SP1.GT.60.) SP1 = 60.                                           00018400
      IF(SP1.LT.5.) WRITE(IWRI,788)                                      00018500
788   FORMAT(' **WARNING: AVG. ROUTE SPEED LESS THAN 5 M.P.H.')          00018600
      GO TO 695                                                          00018700
C                                                                        00018800
650   CONTINUE                                                           00018900
      IF(SPD(1).GT.0.0.AND.SPD(2).GT.0.0.AND.SPD(3).GT.0.) GO TO 670     00019000
      WRITE(IWRI,786)                                                    00019100
      STOP                                                               00019200
670   CONTINUE                                                           00019300
      DO 671 I=1,3                                                       00019400
      IF(SPD(I).LT.5.) WRITE(IWRI,788)                                   00019500
671   IF(SPD(I).GT.60.) SPD(I) = 60.                                     00019600
C                                                                        00019700
695   CONTINUE                                                           00019800
C                                                                        00019900
C**END SPEED CHECK                                                       00020000
C                                                                        00020100
      IF(SP3FLG.EQ.1) GO TO 520                                          00020200
C**HERE TO DECOMPOSE SINGLE ENTERED SPEED INTO BAG SPEEDS                00020300
C     SPD(1) = SP1*1.30                                                  00020400
C     SPD(2) = SP1*.825                                                  00020500
C     SPD(3) = SP1*1.30                                                  00020600
      SPD(1) = SP1                                                       00020700
      SPD(2) = SP1                                                       00025600
      SPD(3) = SP1                                                       00025700
C     SPD(1) = SP1*(1.3777386 - (PCCC*.30/79.42))                        00025800
C     SPD(2) = SP1*(.75935 + (PCHS*.175/72.72))                          00025900
C     SPD(3) = SPD(1)                                                    00026000
C                                                                        00026100
C     PCHSNC = PCCC - PCCO + PCHS                                        00026200
C     PCHSTB = 100. - PCCC - PCHS                                        00026300
C     SPD(1) = SP1*(1.41114406 - .0041114406*PCCO)                       00026400
C     SPD(2) = SP1*(.6162276026 + .003837724*PCHSTB)                     00026500
C     SPD(3) = SP1*(1.44902449 - .0044902449*PCHSNC)                     00026600
520   CONTINUE                                                           00026700
C                                                                        00026800
      IF(VMFLAG.EQ.1.AND.IPROMT.EQ.1) WRITE(IWRI,769)                    00021600
769   FORMAT('0ENTER MODAL SPLIT: FORMAT 6(F4.3,1X)')                    00027000
```

```
*** A06 ***
  329.          00          80 EMAD(I1,I2)=EMAD(I1,I2)+X(I3)*SOA*BAD(I3,I2,I1)*(DETER(I1,I2)+1.0)                    *** A06 ***
  330.          00             IF(HOA.EQ.0.0) GO TO 90
  331.          00             DO 70 I3=10,12
  332.          00          70 EMAD(I1,I2)=EMAD(I1,I2)+X(I3)*SOA*BAD(I3,I2,I1)*(DETER(I1,I2)+1.0)
  333.          00          90 CONTINUE
  334.          00         100 CONTINUE
  335.          00         200 X(10)=1.0
  336.          00             X(11)=V
  337.          00             X(12)=V*V
  338.          00             DO 150 I1=1,18
  339.          00             DO 140 I2=2,2
  340.          00             DO 130 I3=10,12
  341.          00         130 EMCRUZ(I1,I2)=EMCRUZ(I1,I2)+X(I3)*BAD(I3,I2,I1)*(DETER(I1,I2)+1.0)
  342.          00         140 CONTINUE
  343.          00         150 CONTINUE
  344.          00       C
  345.          00       C
  346.          00       C
  347.          00       C
  348.          00       C     CALCULATE EMISSIONS OF MODEL YEARS LATER THAN 1975 BASED ON RATIOS
  349.          00       C      OF FTP EMISSIONS FROM DATA SET UPDATE.
  350.          00             MAXAGE=MAXCY-50
  351.          00             MODAGE=75-50
  352.          00             MODAG1=MODAGE+1
  353.          00             IF(MAXAGE.LE.MODAGE) GO TO 510
  354.          00             DO 500 I4=MODAG1,MAXAGE
  355.          00             IAGE=MAXAGE-I4+1
  356.          00             DO 490 I2=2,2
  357.          00             EMADMY(IAGE,I2)=EMAD(IGROUP(I4,ILOC),I2)*UPDATE(I4,ILOC)
  358.          00             EMCRMY(IAGE,I2)=EMCRUZ(IGROUP(I4,ILOC),I2)*UPDATE(I4,ILOC)
  359.          00         490 CONTINUE
  360.          00         500 CONTINUE
  361.          00       C     IDENTIFY EMISSIONS FROM 1975 AND EARLIER BY AGE RATHER
  362.          00       C      THAN BY GROUP.
  363.          00         510 MINAGE=MAXAGE-19
  364.          00             IF(MINAGE.GT.25) GO TO 460
  365.          00             IF(MODAGE.GT.MAXAGE) MODAGE=MAXAGE
  366.          00             DO 450 I4=MINAGE,MODAGE
  367.          00             IAGE=MAXAGE-I4+1
  368.          00             DO 440 I2=2,2
  369.          00             EMADMY(IAGE,I2)=EMAD(IGROUP(I4,ILOC),I2)
  370.          00             EMCRMY(IAGE,I2)=EMCRUZ(IGROUP(I4,ILOC),I2)
  371.          00         440 CONTINUE
  372.          00         450 CONTINUE
  373.          00       C
  374.          00       C
  375.          00       C
  376.          00       C
  377.          00       C     CORRECT EMISSIONS TO SCENARIO AND CALENDAR YEAR OF INTEREST USING
  378.          00       C      CORRECTION FACTORS DERIVED FROM FTP RATIOS.  FIND COMPOSITE LDV
  379.          00       C       EMISSIONS USING FTP TRAVEL WEIGHTING FACTORS.
  380.          00         460 DO 400 I4=MINAGE,MAXAGE
  381.          00             IAGE=MAXAGE-I4+1
  382.          00             DO 390 I2=2,2
  383.          00             IF(IBLIP.EQ.2) GO TO 461
  384.          00             EMAD(IAGE,I2)=EMADMY(IAGE,I2)*FMODY (IAGE)*ACFAC(ITIME,IAGE,I2)
  385.          00             EMCRUZ(IAGE,I2)=EMCRMY(IAGE,I2)*FMODY (IAGE)*ACFAC(ITIME,IAGE,I2)
  386.          00             GO TO 462
  387.          00         461 EMAD(IAGE,I2)=EMADMY(IAGE,I2)*RATIO (IAGE,I5,I2)*FMODY (IAGE)
  388.          00            1*ACFAC(ITIME,IAGE,I2)
  389.          00             EMCRUZ(IAGE,I2)=EMCRMY(IAGE,I2)*RATIO(IAGE,I5,I2)*FMODY (IAGE)
  390.          00            1*ACFAC(ITIME,IAGE,I2)
  391.          00         462 EMAD1(ITIME,I2,I5)=EMAD1(ITIME,I2,I5)+EMAD(IAGE,I2)
  392.          00             EMCR1(ITIME,I2,I5)=EMCR1(ITIME,I2,I5)+EMCRUZ(IAGE,I2)
  393.          00         390 CONTINUE
  394.          00         400 CONTINUE
```

```
      00          1JHOTP(5),JCOLDN(5),JCOLDC(5),JHOT(5)
      00           COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
      00          1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
      00           COMMON/PRE5/ICOLDN,ICOLDC,IHOTC
      00           COMMON/REGCOM/IREJN
      00           INTEGER CY
      00           DATA IREAD,IWRI/5,6/
      00           ISTOP=0
      00     C
      00     C
      00     C     READ AND EDIT CARD TYPE 1P
      00     C
      00     C
      00           READ (IREAD,100) (MHEAD(I),I=1,10),(IDATE(I),I=1,3),ILOC,MODRUN,
      00          1LPATH,LNPATH,IMFLAG,MYFLAG,IVTFLG
      00      100  FORMAT(3X,10A2,3I2,7(1X,I1))
      00           IF(ILOC.NE.1.AND.ILOC.NE.2.AND.ILOC.NE.3) GO TO 101
      00           IF(MODRUN.NE.1.AND.MODRUN.NE.2) GO TO 101
      00           IF(LPATH.NE.1.AND.LPATH.NE.2) GO TO 101
      00           IF(LNPATH.NE.1.AND.LNPATH.NE.2) GO TO 101
      00           IF(IMFLAG.NE.0.AND.IMFLAG.NE.1) GO TO 101
      00           IF(MYFLAG.NE.0.AND.MYFLAG.NE.2) GO TO 101
      00           IF(IVTFLG.NE.0.AND.IVTFLG.NE.2) GO TO 101
      00           IREJN=ILOC
      00           CY=IDATE(1)
      00           GO TO 109
      00      101  WRITE(IWRI,102)
      00      102  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 1P)
      00           ISTOP=1
      00           WRITE(IWRI,1010)
      00     1010  FORMAT(5X,47HPROCESSING WILL CONTINUE THROUGH LAST CARD TYPE)
      00     C
      00     C
      00     C     READ AND EDIT CARD TYPE 2P
      00     C
      00     C
      00      109  IF(MYFLAG.EQ.0) GO TO 111
      00           IF(IVTFLG.EQ.0) GO TO 112
      00           READ(IREAD,110) (FMODYR(I),I=1,20),(FVEHTY(J),J=1,6)
      00      110  FORMAT(3X,25F3.1,F2.1)
      00      114  SUM=0.
      00           DO 115 I=1,20
      00      115  SUM=SUM+FMODYR(I)
      00           IF(SUM.GT.0.9999.AND.SUM.LT.1.0001) GO TO 113
      00      104  WRITE(IWRI,103)
      00      103  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 2P)
      00           ISTOP=1
      00           WRITE(IWRI,1010)
      00           GO TO 119
      00      113  IF(IVTFLG.EQ.0) GO TO 119
      00      107  SUM=0.
      00           DO 105 J=1,6
      00      105  SUM=SUM+FVEHTY(J)
      00           IF(SUM.LT.0.9999.OR.SUM.GT.1.0001) GO TO 104
      00           GO TO 119
      00      111  IF(IVTFLG.EQ.0) GO TO 119
      00           READ(IREAD,106) (FVEHTY(J),J=1,6)
      00      106  FORMAT(63X,5F3.1,F2.1)
      00           GO TO 107
      00      112  READ(IREAD,108) (FMODYR(I),I=1,20)
      00      108  FORMAT(3X,20F3.1)
      00           GO TO 114
      00     C
      00     C
      00     C     READ AND EDIT CARD TYPE 3P
      00     C
```

*** A07 ***

*** A08 ***

```
@ELT,L CEM.SPFCLX
ELT 8R1 S7491C 04/23/82 15:45:26 (0)
      1.          00            SUBROUTINE SPFCLX(SPARA,SPBACK)                                                  00078400
      2.          00            COMMON/ACOM/AIN1,AIN2,AIN3                                                       00132100
      3.          00      C                                                                                      00132200
      4.          00            REAL AIN1(6,18),AIN2(6,18),AIN3(6,18)                                            00132300
      5.          00            REAL SPARA(3),SPBACK(18,3,3),A(6,18,3)                                           00132500
      6.          00             EQUIVALENCE (AIN1,A)                                                            00078600
      7.          00      C**HC SPEED CORRECTION FACTOR COEFFICIENTS                                             00132500
      8.          00            DATA AIN1/                                                                       00132600
      9.          00           *2.2461,-.29097,0.015889,-.47249E-03,0.69608E-05,-.39280E-07,                     00132700
     10.          00           *2.3103,-.28957,0.015299,-.44669E-03,0.64818E-05,-.36346E-07,                     00132800
     11.          00           *2.1656,-.26999,0.014420,-.43364E-03,0.65074E-05,-.37810E-07,                     00132900
     12.          00           *2.1973,-.29998,0.016135,-.48729E-03,0.72909E-05,-.41977E-07,                     00133000
     13.          00           *2.4087,-.30819,0.016817,-.50684E-03,0.75385E-05,-.43160E-07,                     00133100
     14.          00           *2.2322,-.28499,0.015383,-.45674E-03,0.67449E-05,-.38380E-07,                     00133200
     15.          00           *2.5655,-.28778,0.015682,-.47318E-03,0.70795E-05,-.40844E-07,                     00133300
     16.          00           *2.0278,-.27305,0.015360,-.46030E-03,0.67853E-05,-.38688E-07,                     00133400
     17.          00           *2.1506,-.28362,0.015380,-.44214E-03,0.62873E-05,-.34631E-07,                     00133500
     18.          00           *2.2302,-.29365,0.016240,-.48415E-03,0.71159E-05,-.40286E-07,                     00133600
     19.          00           *2.1223,-.29107,0.016910,-.52615E-03,0.80271E-05,-.47012E-07,                     00133700
     20.          00           *2.1556,-.28345,0.015700,-.46976E-03,0.69383E-05,-.39471E-07,                     00133800
     21.          00           *2.0735,-.28935,0.017300,-.55471E-03,0.86420E-05,-.51311E-07,                     00133900
     22.          00           *2.3495,-.30496,0.016842,-.50962E-03,0.75952E-05,-.43496E-07,                     00134000
     23.          00           *2.1134,-.28568,0.016320,-.50079E-03,0.75507E-05,-.43719E-07,                     00134100
     24.          00           *2.1194,-.29863,0.018450,-.61654E-03,0.99206E-05,-.60402E-07,                     00134200
     25.          00           *2.6838,-.34463,0.019542,-.62572E-03,0.97844E-05,-.58337E-07,                     00134300
     26.          00           *2.3954,-.33578,0.021161,-.73155E-03,0.12072E-04,-.74857E-07)                     00134400
     27.          00      C                                                                                      00134500
     28.          00      C**CO SPEED CORRECTION FACTOR COEFFICIENTS                                             00134600
     29.          00            DATA AIN2/                                                                       00134700
     30.          00           * 1.8198,-.25466,.015235,-.48740E-03,.75821E-05,-.44951E-07,                      00134800
     31.          00           * 2.3399,-.29698,.016007,-.47740E-03,.70675E-05,-.40398E-07,                      00134900
     32.          00           * 2.4415,-.29144,.014296,-.38785E-03,.52978E-05,-.28244E-07,                      00135000
     33.          00           * 2.4655,-.30502,.016050,-.47397E-03,.69208E-05,-.39976E-07,                      00135100
     34.          00           * 2.7780,-.31915,.017318,-.49233E-03,.58495E-05,-.31497E-07,                      00135200
     35.          00           * 2.7890,-.32711,.016296,-.44577E-03,.67191E-05,-.37440E-07,                      00135300
     36.          00           * 2.7074,-.33131,.017618,-.53858E-03,.81703E-05,-.47780E-07,                      00135400
     37.          00           * 1.8692,-.27668,.017233,-.55828E-03,.87168E-05,-.51698E-07,                      00135500
     38.          00           * 1.8213,-.27205,.017030,-.55202E-03,.86254E-05,-.51144E-07,                      00135600
     39.          00           * 2.0142,-.29519,.018635,-.62161E-03,.99366E-05,-.59978E-07,                      00135700
     40.          00           * 2.0453,-.31062,.020485,-.70853E-03,.11621E-04,-.71569E-07,                      00135800
     41.          00           * 2.3187,-.34115,.020945,-.66589E-03,.10223E-04,-.59827E-07,                      00135900
     42.          00           * 2.5752,-.32889,.018975,-.62826E-03,.10092E-04,-.61273E-07,                      00136000
     43.          00           * 2.6845,-.33282,.017628,-.52412E-03,.77225E-05,-.43702E-07,                      00136100
     44.          00           * 2.1549,-.32912,.021011,-.68906E-03,.10839E-04,-.64712E-07,                      00136200
     45.          00           * 2.5456,-.36285,.023277,-.81504E-03,.13623E-04,-.85591E-07,                      00136300
     46.          00           * 2.8393,-.36876,.021078,-.67644E-03,.10627E-04,-.63641E-07,                      00136400
     47.          00           * 2.4875,-.39156,.027072,-.97618E-03,.16527E-04,-1.0432E-07)                      00136500
     48.          00      C                                                                                      00136600
     49.          00      C**NOX SPEED CORRECTION FACTOR COEFFICIENTS                                            00136700
     50.          00            DATA AIN3/                                                                       00136800
     51.          00           * 2.4446,-.250110,1.3829E-02,-.28703E-03,.20758E-05,0.0,                          00136900
     52.          00           * 1.6863,-.118300,.65497E-02,-.13714E-03,.10085E-05,0.0,                          00137000
     53.          00           * 1.1263,-.039340,.26864E-02,-.60802E-04,.47739E-06,0.0,                          00137100
     54.          00           * 1.2268,-.044498,.26248E-02,-.56715E-04,.43429E-06,0.0,                          00137200
     55.          00           * 1.0174,-.011896,.91437E-03,-.21574E-04,.18230E-06,0.0,                          00137300
     56.          00           * .98760,-.019567,.16964E-02,-.44040E-04,.42800E-06,0.0,                          00137400
     57.          00           * 1.1592,-.044434,.29643E-02,-.66899E-04,.57346E-06,0.0,                          00137500
     58.          00           * 1.8866,-.161290,.90499E-02,-.18561E-03,.13556E-05,0.0,                          00137600
     59.          00           * 1.5578,-.113030,.67183E-02,-.14341E-03,.10608E-05,0.0,                          00137700
     60.          00           * 2.0452,-.194010,.11074E-01,-.23175E-03,.16837E-05,0.0,                          00137800
     61.          00           * 1.6326,-.121860,.70302E-02,-.14629E-03,.10614E-05,0.0,                          00137900
     62.          00           * 1.4482,-.122440,.79502E-02,-.17108E-03,.12578E-05,0.0,                          00138000
     63.          00           * .24597,.084195,-.34084E-02,.62988E-04,-.41397E-06,0.0,                          00138100
     64.          00           * 1.2817,-.080487,.53574E-02,-.11889E-03,.90106E-06,0.0,                          00138200
```

```
*** A09 ***                                                                                                    *** A09 ***
@ELT,L CEM.TAPEFILE7
ELT 8R1 S7491C 04/23/82 15:45:32 (0)
 SI IS NOT SIR TYPE SDF *[Faa[aaaaaa
    1.          00          .89903E+02  .62701E+02  .49103E+02  .40055E+02  .33243E+02  .28314E+02  .25238
    2.          00          .23423E+02  .22666E+02  .19779E+02
    3.          00          .55009E+02  .55009E+02  .55009E+02  .55009E+02  .55009E+02
    4.          00          .37838E+00  .81255E+00  .35091E+00  .21323E+01  .31401E+00  .34895E+01  .28229
    5.          00          .26321E+00  .66643E+01  .25835E+00  .88186E+01
    6.          00          .19976E+02

END ELT.  ERRORS: NONE. TIME:  0.205 SEC. IMAGE COUNT: 6

@HDG,P  ******  TAPEFILE8  ******
```

```
   NPATHE          RELOCATABLE  28 MAY 81  12:57:13   56   3   11                 QTR    4490
   DISPRS          RELOCATABLE  28 MAY 81  12:57:15   57   3   20                 QTR    4504
   STREET          RELOCATABLE  28 MAY 81  12:57:16   58   2    6                 QTR    4527
   ROAD            RELOCATABLE  28 MAY 81  12:57:20   59   4   65                 QTR    4535
   NPATHD          RELOCATABLE  28 MAY 81  12:57:22   60   4   36                 QTR    4604
   SHORTY          RELOCATABLE  28 MAY 81  12:57:24   61   4   41                 QTR    4644
   MOBLE1          RELOCATABLE  28 MAY 81  12:59:39   62   3   15                 QTR    4689
   GRAF            RELOCATABLE  28 MAY 81  13:27:08   63   3    6                 QTR    4707
   COMPILE         ELT SYMB -Q  28 MAY 81  13:27:47   64        12    5    4    5          4716
   MAPPREPRS       ELT SYMB -Q  28 MAY 81  13:32:31   65         9    5    1    2          4728
   PREPRS          ABSOLUTE     28 MAY 81  13:32:48   66       788                 QTR    4737
   RUNTEST11       ELT SYMB     17 JUN 81  17:53:24   67         5    5    0    1          5525
   RUNTEST6        ELT SYMB     17 JUN 81  18:09:52   68         5    5    2    3          5557
   RUNTEST22       ELT SYMB -Q  01 JUL 81  18:32:55   69        13    5    3    4          5529
   INDATA          ELT SYMB -Q  02 JUL 81  15:47:47   70       162    5    4    5          5562
   INDATA          RELOCATABLE  02 JUL 81  15:48:12   71   6   197                 QTR    5704
   RUNTEST18       ELT SYMB     02 JUL 81  16:05:08   72         3    5    4    5          5907
   MAPCEMAP        ELT SYMB     14 JUL 81  10:14:51   73         3    5    2    3          5910
   TRAF            ELT SYMB     24 AUG 81  15:20:2?   74        12    5    1    2          5913
   TRAF            RELOCATABLE  24 AUG 81  15:20:40   75   4     9                 QTR    5925
   CEMAP           ELT SYMB     24 AUG 81  15:24:49   76        13    5    2    3          5938
   ANNOUT          ELT SYMB     24 AUG 81  23:54:09   77        28    5    3    4          5951
   ANNOUT          RELOCATABLE  24 AUG 81  23:54:13   78   3    41                 QTR    5979
   STATIS          ELT SYMB     24 AUG 81  23:56:49   79        69    5    5    5          6023
   STATIS          RELOCATABLE  24 AUG 81  23:56:55   80   4    77                 QTR    6092
   FREE            ELT SYMB     22 OCT 81  13:28:06   81        37    5    2    3          6173
   FREE            RELOCATABLE  22 OCT 81  13:28:23   82   4    49                 QTR    6210
   BLKDAT1         ELT SYMB     22 OCT 81  13:30:48   83         9    5    1    2          6263
   BLKDAT1         RELOCATABLE  22 OCT 81  13:31:02   84   2     3                 QTR    6276
   CEMAP           ABSOLUTE     22 OCT 81  13:31:21   85       573                 QTR    6277
   CEMAP           RELOCATABLE  01 DEC 81  15:52:52   86   3     3                 QTR    6450
   TAPEFILE3       SYMBOLIC -Q  28 MAY 81  12:03:28   87         7    5    0    1          6855
   TAPEFILE4       SYMBOLIC -Q  28 MAY 81  12:03:40   88         7    5    0    1          6866
   TAPEFILE5       SYMBOLIC -Q  28 MAY 81  12:03:53   89       157    5    0    1          6867
   TAPEFILE6       SYMBOLIC -Q  28 MAY 81  12:04:09   90         3    5    0    1          7024
   TAPEFILE7       SYMBOLIC -Q  28 MAY 81  12:04:26   91         5    5    0    1          7027
   TAPEFILE8       SYMBOLIC -Q  28 MAY 81  12:04:39   92        13    5    0    1          7032
NEXT AVAILABLE LOCATION-                                                              7045

ASSEMBLER PROCEDURE TABLE EMPTY

COBOL PROCEDURE TABLE EMPTY

FORTRAN PROCEDURE TABLE EMPTY

ENTPY POINT TABLE EMPTY
**

@HDG,P  ******  ALUH  ******
```

```
      00     C     6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5   00144100
      00           DATA INDX49/                                                   
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144300
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144400
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144500
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144600
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144700
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144800
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00144900
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145000
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145100
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145200
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145300
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145400
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145500
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145600
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145700
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145800
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00145900
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0/  00146000
      00     C                                                                    
      00     C     6 6 6 6 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 9 9 9 9 9            00146100
      00     C     6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5   00146200
      00           DATA INDXCA/                                                   00146300
      00          *2 2 2 2 2 2 2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4,  00146500
      00          *2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3,  00146600
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00146700
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00146800
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00146900
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147000
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147100
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147200
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147300
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147400
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147500
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147600
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147700
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147800
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00147900
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00148000
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0/  00148100
      00     C                                                                    00148200
      00     C     6 6 6 6 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 9 9 9 9 9            00148300
      00     C     6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5   00148400
      00           DATA INDXHI/                                                   00148500
      00          *1 1 2 2 2 2 2 2 2 2 3 3 4 5 5 6 6 7 7 8 8 8 8 8 8 8 8 8 8 8,  00148700
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00148800
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00148900
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149000
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149100
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149200
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149300
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149400
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149500
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149600
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149700
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149800
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00149900
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00150000
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00150100
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00150200
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0,  00150300
      00          *1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0/  00150400
      00     C                                                                    00150500
      00     C***EXHAUST EMISSION FACTOR INTERCEPT: 49 STATE                      00150600
```

*** B02 ***

```
*** B03 ***
@ELT,L CEM.DATA3
ELT BR1 S7491C 04/23/82 15:44:50 (0)
     1.          03     1P TEST 11                    781215 1 1 1 1 0 0 0
     2.          00     3P   0  0  0  0 73 73  0  0  02.5 -2.5
     3.          00     4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
     4.          00     5P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.210 SEC. IMAGE COUNT: 4

@HDG,P  ******  DISPRS  ******
```

*** B04 ***

```
      1.          00          SUBROUTINE GRAF
      2.          00    C
      3.          00    C
      4.          00    C     THIS SUBROUTINE IS PASSED THE VARIABLES NEEDED TO PLOT HISTOGRAMS
      5.          00    C     OF PERCENTAGE OF COMMUTERS IN TEN EXPOSURE CLASSES AND THE
      6.          00    C     PROBABILITY OF EXPERIENCING EXPOSURES IN EACH CLASS.  PATHWAY-
      7.          00    C     SPECIFIC AND METEOROLOGY-SPECIFIC OPTIONAL OUTPUT OF THIS TYPE
      8.          00    C     IS ALSO PASSED.
      9.          00    C     DUE TO DIFFERENCES IN COMPUTERS AND LINE PRINTERS, THIS SUBROU-
     10.          00    C     TINE DOES NOT PLOT HISTOGRAMS, BUT IS MEANT RATHER AS A VEHICLE
     11.          00    C     FOR THE ADDITION OF USER-SUPPLIED PLOTTING CODE.  THE VARIABLES
     12.          00    C     TO BE PLOTTED HAVE BEEN PASSED TO THIS ROUTINE AND ARE DEFINED
     13.          00    C     IN COMMENTS BELOW.
     14.          00    C
     15.          00    C
     16.          00          COMMON/IO/IREAD,IWRI,IFILE
     17.          00          COMMON/RUNTYP/MODRUN
     18.          00          COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     19.          00         1JOPT3
     20.          00          COMMON/OPOUT/COM01A(10,3,5),COM01P(10,3,5),CMN02A(10,3,5),
     21.          00         1CMN02P(10,3,5),EXP3(10,3,2)
     22.          00          COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     23.          00         1EXPSUM(3,2),AVCONC(3,5,2)
     24.          00          DIMENSION ENDPT(11)
     25.          00    C
     26.          00    C     COMPUTING BEGINNING AND ENDING VALUES FOR EACH HISTOGRAM CLASS
     27.          00          ENDPT(1)=0.
     28.          00          DO 100 IP=2,2
     29.          00          DO 100 ICC=2,11
     30.          00      100 ENDPT(ICC)=(ICC-1)*EINTVL(IP)
     31.          00    C
     32.          00    C
     33.          00    C     DEFINITIONS--ANNUAL AND SHORT-TERM MODE
     34.          00    C
     35.          00    C     ENDPT(ICC)            ARE THE VALUE LIMITS ON 10 EXPOSURE CLASSES.
     36.          00    C                           ENDPT(1) AND ENDPT(2) ARE THE LOWER AND UPPER
     37.          00    C                           LIMITS ON CLASS 1, ENDPT(2) AND ENDPT(3) ARE THE
     38.          00    C                           LIMITS ON CLASS 2, ..., ENDPT(10) AND
     39.          00    C                           ENDPT(11) ARE THE LIMITS ON CLASS 10.
     40.          00    C     COMSUM(IC,IP,IAMPM) IS THE PERCENTAGE OF COMMUTERS IN EXPOSURE
     41.          00    C                           CLASS IC FOR POLLUTANT IP DURING TIME PERIOD
     42.          00    C                           IAMPM.
     43.          00    C     CMNSUM(IC,IP,IAMPM) IS THE PROBABILITY OF EXPERIENCING EXPOSURE
     44.          00    C                           LEVELS IN CLASS IC FOR POLLUTANT IP DURING TIME
     45.          00    C                           PERIOD IAMPM.
     46.          00    C     IC                    IS EXPOSURE CLASS INDEX, IC=1,10.
     47.          00    C     IP                    IS POLLUTANT INDEX, IP=2=CO.
     48.          00    C     IAMPM                 IS TIME PERIOD INDEX, 1 = AM COMMUTE IN ANNUAL
     49.          00    C                           MODE OR COMMUTE OF INTEREST IN SHORT-TERM MODE,
     50.          00    C                           2 = PM COMMUTE IN ANNUAL MODE.
     51.          00    C     MODRUN                IS FLAG FOR MODE OF MODEL OPERATION, 1 = ANNUAL,
     52.          00    C                           2 = SHORT-TERM.
     53.          00    C
     54.          00    C
     55.          00    C     DEFINITIONS--ANNUAL MODE ONLY
     56.          00    C
     57.          00    C     JOPT1                 IS NO. OF PATHWAYS FOR WHICH OPTION 1 WAS CHOSEN
     58.          00    C     JOPT2                 IS NO. OF PATHWAYS FOR WHICH OPTION 2 WAS CHOSEN
     59.          00    C     JOPT3                 IS NO. OF METEOROLOGICAL CONDITIONS FOR WHICH
     60.          00    C                           OPTION 3 WAS CHOSEN.
     61.          00    C     NOPT1(KP1)            IS THE NUMBER OF THE KP1-TH PATHWAY FOR WHICH
     62.          00    C                           OPTION 1 WAS CHOSEN.
     63.          00    C     NOPT2(KP2)            IS THE NUMBER OF THE KP2-TH PATHWAY FOR WHICH
     64.          00    C                           OPTION 2 WAS CHOSEN.
```

```
*** B05 ***
    263.          00      C                                                                                    *** B05 ***
    264.          00            IF(VMFLAG.EQ.1.AND.INFLAG.EQ.1) READ(IREAD,726) VMTMIX                         00021900
    265.          00            IF(VMFLAG.EQ.1.AND.INFLAG.EQ.0) READ(IREAD,726) VMTMIX                         00027400
    266.          00      C     IF(VMFLAG.EQ.2.AND.INFLAG.EQ.1)READ(IREAD,726)VMTMIX                           00027400
    267.          00      726   FORMAT(6(F4.3,1X))
    268.          00      C
    269.          00      C**HERE READ IN ALUH PARAMS                                                          00022300
    270.          00            IF(ALHFLG.EQ.0) GO TO 890                                                      00022400
    271.          00            IF(IPROMT.EQ.1) WRITE(IWRI,770)                                                00022500
    272.          00            IF(INFLAG.EQ.0)                                                                00028000
    273.          00           *READ(IREAD,727) AC,XLOAD,TRAILR,ABSHUM                                         00022800
    274.          00      C     IF(INFLAG.EQ.1)                                                                00022900
    275.          00      C    *READ(IREAD,727) AC,XLOAD,TRAILR,ABSHUM                                         00028400
    276.          00            IF(INFLAG.NE.1) GO TO 890                                                      00028500
    277.          00            AC=AC/100.
    278.          00            XLOAD(1)=0.
    279.          00            XLOAD(2)=0.
    280.          00            XLOAD(3)=0.
    281.          00            TRAILR=0.
    282.          00            ABSHUM=75.
    283.          00      890   CONTINUE
    284.          00      C                                                                                    00023000
    285.          00      727   FORMAT(6(F4.3,1X))                                                             00023100
    286.          00      C
    287.          00      C**HERE READ IN TRUCK CHAR. PARAMS                                                   00023300
    288.          00            IF(TRKFLG.EQ.0) GO TO 895                                                      00023400
    289.          00            IF(IPROMT.EQ.1) WRITE(IWRI,771)                                                00023500
    290.          00      771   FORMAT('0ENTER HGWGT,HGCID,HDCID: FORMAT 4(F5.0,1X)')                          00029200
    291.          00            IF(INFLAG.EQ.0)                                                                00023800
    292.          00           *READ(IREAD,728) HGWGT,HDWGT,HGCID,HDCID                                        00023900
    293.          00            IF(INFLAG.EQ.1)                                                                00029600
    294.          00           *READ(IREAD,728) HGWGT,HDWGT,HGCID,HDCID                                        00029700
    295.          00      895   CONTINUE                                                                       00024000
    296.          00      C                                                                                    00024100
    297.          00      728   FORMAT(4(F5.0,1X))
    298.          00      C
    299.          00            RETURN                                                                         00024300
    300.          00      C                                                                                    00024400
    301.          00      C*************************************************************************          00024500
    302.          00      C                                                                                    00024600
    303.          00      99    CONTINUE                                                                       00024700
    304.          00      770   FORMAT('0ENTER AC,XLOAD(3),TRAILR,ABSHUM: FORMAT 6(F4.3,1X)')                 00024800
    305.          00            IRDFLG = 0
    306.          00      C     DEBUG SUBCHK                                                                   00024900
    307.          0C            RETURN                                                                         00025000
    308.          00            END                                                                            00025100
                                                                                                               00025200
END ELT.  ERRORS: NONE.  TIME:  0.780 SEC.  IMAGE COUNT: 308

@HDG,P  ******  LDVIMX  ******
```

```
*** B06 ***                                                                                                    *** B06 ***
  395.          00       1010 A=DECEL
  396.          00       1000 CONTINUE
  397.          00       C     CONVERT EMAD TO EXCESS EMISSIONS.
  398.          00            DO 2000 I1=1,6
  399.          00            DO 2010 I2=2,2
  400.          00       2010 EMAD1(ITIME,I2,I1)=EMAD1(ITIME,I2,I1)-EMCR1(ITIME,I2,I1)
  401.          00       2000 CONTINUE
  402.          00       C
  403.          00       C
  404.          00       C
  405.          00       C
  406.          00       C     CONVERT TO GM/VEH-MILE.
  407.          00            DO 2500 ISPD=1,6
  408.          00            DO 2490 IPOLL=2,2
  409.          00            EMAD1(ITIME,IPOLL,ISPD)= EMAD1(ITIME,IPOLL,ISPD)      *RATEM (ITIM
  410.          00           1E,ISPD,IPOLL)
  411.          00       2490 EMCR1(ITIME,IPOLL,ISPD)= EMCR1(ITIME,IPOLL,ISPD)      *RATEM(ITIME
  412.          00           1,ISPD,IPOLL)
  413.          00       2500 CONTINUE
  414.          00       C
  415.          00       C
  416.          00       C
  417.          00       C
  418.          00       7000 CONTINUE
  419.          00            ILOOP=9-MODRUN
  420.          00            GO TO 1500
  421.          00       1100 WRITE(6,5002)
  422.          00       5002 FORMAT(1HO,68HMODAL EMISSIONS CANNOT BE CALCULATED FOR CALENDAR YE
  423.          00           1ARS BEFORE 1970.)
  424.          00            STOP
  425.          00       1500 CONTINUE
  426.          00       9050 FORMAT(1H1)
  427.          00       9999 CONTINUE
  428.          00            CALL OUTPUT(CY)
  429.          00            RETURN
  430.          00            END

END ELT.  ERRORS: NONE. TIME:  0.935 SEC. IMAGE COUNT: 430

@HDG,P  ******  NPATHD  ******
```

```
      00      C
      00       119  IF(MODRUN.EQ.2) GO TO 126
      00      C
      00      C     MODEL IS IN ANNUAL MODE
      00      C
      00            IF(LPATH.EQ.2) GO TO 122
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE MODEL COMPUTED
      00      C
      00            READ(IREAD,120) ICOLDN,ICOLDC,IHOTC,ITEMPA,ITEMPP,IACAM,IACPM,
      00           1ACCEL,DECEL
      00       120  FORMAT(3X,7I3,2F4.1)
      00       121  IF(ICOLDN.LT.0.OR.ICOLDN.GT.100) GO TO 131
      00            IF(ICOLDC.LT.0.OR.ICOLDC.GT.100) GO TO 131
      00            IF(IHOTC.LT.0.OR.IHOTC.GT.100) GO TO 131
      00            IF(ACCEL.LE.0.0.OR.DECEL.GE.0.) GO TO 131
      00            IF(MODRUN.EQ.2) GO TO 130
      00            GO TO 125
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE USER-SUPPLIED
      00      C
      00       122  READ(IREAD,123) ITEMPA,ITEMPP,IACAM,IACPM
      00       123  FORMAT(12X,4I3)
      00       125  IF(IACAM.LT.0.OR.IACAM.GT.100) GO TO 131
      00            IF(IACPM.LT.0.OR.IACPM.GT.100) GO TO 131
      00            GO TO 133
      00      C
      00      C     MODEL IS IN SHORT-TERM MODE
      00      C
      00       126  IF(LPATH.EQ.2) GO TO 128
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE MODEL-COMPUTED
      00      C
      00            READ(IREAD,127) ICOLDN,ICOLDC,IHOTC,ITEMPS,IACS,ACCEL,DECEL
      00       127  FORMAT(3X,5I3,2F4.1)
      00            GO TO 121
      00      C
      00      C     PATHWAY EMISSIONS ARE TO BE USER-SUPPLIED
      00      C
      00       128  READ(IREAD,129) ITEMPS,IACS
      00       129  FORMAT(12X,2I3)
      00       130  IF(IACS.LT.0.OR.IACS.GT.100) GO TO 131
      00            GO TO 133
      00       131  WRITE(IWRI,132)
      00       132  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 3P)
      00            ISTOP=1
      00            WRITE(IWRI,1010)
      00      C
      00      C
      00      C     READ AND EDIT CARD TYPE 4P
      00      C
      00      C
      00       133  IF(LNPATH.EQ.2) GO TO 144
      00            IF(MODRUN.EQ.2) GO TO 136
      00      C
      00      C     MODEL IS IN ANNUAL MODE
      00      C
      00            READ (IREAD,134) (JCLDNA(L),L=1,5),(JCLDCA(L),L=1,5),(JHOTA(L),
      00           1L=1,5)
      00       134  FORMAT(3X,15I3)
      00            DO 135 L=1,5
      00            IF(JCLDNA(L).LT.0.OR.JCLDNA(L).GT.100) GO TO 138
      00            IF(JCLDCA(L).LT.0.OR.JCLDCA(L).GT.100) GO TO 138
      00            IF(JHOTA(L).LT.0.OR.JHOTA(L).GT.100) GO TO 138
      00       135  CONTINUE
      00            GO TO 140
```

*** B07 ***

```
    65.          00          *  1.5345,-.125670,.78592E-02,-.16943E-03,.12549E-05,0.0,                00138300
    66.          00          *  .70481,.038153,-.17391E-02,.32614E-04,-.20385E-06,0.0,                00138400
    67.          00          *  .78384,.32865E-03,-.10603E-02,-.31935E-04,.29039E-06,0.0,             00138500
    68.          00          *  .94213,-.042324,.38625E-02,-.93085E-04,.75388E-06,0.0  /              00138600
    69.          00      C
    70.          00           DO 30 IP = 1,3                                                          00078700
    71.          00              DO 20 IG = 1,18                                                      00078800
    72.          00                 IGG = IG                                                          00078900
    73.          00                DO 10 IS = 1,3                                                     00079000
    74.          00                   SUM = A(6,IGG,IP)                                               00079100
    75.          00                   S = SPARA(IS)                                                   00079200
    76.          00                  DO 5 I = 1,5                                                     00079300
    77.          00                   SUM = SUM*S + A(6-I,IGG,IP)                                     00079400
    78.          00      5           CONTINUE                                                         00079500
    79.          00                 SCF=EXP(SUM)                                                      00079600
    80.          00                 IF(IP.EQ.3) SCF=SUM                                               00079700
    81.          00                 SPBACK(IG,IS,IP) = SCF                                            00079800
    82.          00     10          CONTINUE                                                         00079900
    83.          00     20        CONTINUE                                                           00080000
    84.          00     30    CONTINUE                                                               00080100
    85.          00           RETURN                                                                  00080200
    86.          00      C    DEBUG SUBCHK                                                           00080300
    87.          00           END                                                                     00080400
                                                                                                     00080500
```

*** B08 ***

END ELT. ERRORS: NONE. TIME: 0.353 SEC. IMAGE COUNT: 87

@HDG,P ****** STATIS ******

```
*** B09 ***
@ELT,L CEM.TAPEFILE8
ELT BR1 S7491C 04/23/82 15:45:33 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
     1.          00     1M  TEST 22                781215 2 1 1 1
     2.          00     2M  2 3 3          2.0018939
     3.          00     3M  1 111 1500. 1200. 1                1 0   02214 0 0          1. 1.    2000. 2000.01
     4.          00     3M  1 211 1500. 1200. 1                1 0   02214 0 0     2000.2000.    8000. 8000.12
     5.          00     3M  1 311 1500. 1200. 1                1 0   02214 0 0     4000.4000.    8000. 8000.32
     6.          00     3M  2 112 1000.  800. 1                1 0   02212 0 0          1. 1.    2000. 2000.01
     7.          00     3M  2 222  500.  400. 1                1 0   02212 0 0          1. 1.    2000. 2000.22
     8.          00     3M  2 323  500.  400. 1                1 0   02212 0 0          1. 1.    2000. 2000.21
     9.          00     4M  1 2  0.  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.0.0.6.6.
    10.          00     4M  1 3  0.  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.0.0.6.6.
    11.          00     4M  2 2500.400.400.300.1500150015001500 0. 0. 0. 0. 0. 0. 0. 0.1500120010001000150.0.
    12.          00     4M  2 3500.400.400.300.1500150015001500 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.0.0.0.0.
    13.          00      5M      1     1
    14.          00      6M 10   .2   .2   .2   .2   .2
    15.          00     7M   11.0        1.0       6562.      100000.    1
    16.          00     7M   26563.       6563.     3281.      100000.    1
    17.          00      8M 1.0        120 4

END ELT.  ERRORS: NONE. TIME:  0.213 SEC. IMAGE COUNT: 17

@HDG,P  ******  TFCALX  ******
```

*** B09 ***

```
@ELT,L CEM.ALUH
ELT 8R1 S7491C 04/23/82 15:44:37 (0)
```

*** C01 ***

```
      1.          00            SUBROUTINE ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)                    00113100
      2.          00      C                                                                             00113200
      3.          00            COMMON/RET1/ALHRET(20,4,3)                                              00113300
      4.          00      C                                                                             00113400
      5.          00            INTEGER CY                                                              00113500
      6.          00            REAL XLOAD(3)                                                           00113700
      7.          00            REAL PCW(20)                                                            00120400
      8.          00            REAL A(20,4,3),U(20,3,3),L(3,3),H(3)                                    00113900
      9.          00            REAL TCFA(3),TCFB(3),TCFC(3)                                            00114000
     10.          00            REAL CFLD(3)                                                            00114100
     11.          00            REAL ACCF(3),PCWAC(45)                                                  00114200
     12.          00      C                                                                             00114300
     13.          00            DATA ACCF/1.13,1.18,1.18/                                               00114400
     14.          00            DATA CFLD/1.06,1.20,1.03/                                               00114500
     15.          00            DATA PCWAC/15*.54,3*.66,4*.75,3*.81,20*.81/                             00114600
     16.          00            DATA TCFA/1.32,2.15,1.16/,TCFB/.73,1.55,1.28/,TCFC/.43,.39,.92/         00114700
     17.          00      C  IN TCFA ABOVE, 2ND VALUE SHOULD BE 2.15..IT IS 1.15 FOR ORE. CF.           00114800
     18.          00      C                                                                             00114900
     19.          00            PCCOLD=PCCC *.01                                                        00115000
     20.          00      C                                                                             00115100
     21.          00            DO 207 IP=1,3                                                           00115200
     22.          00            H(IP)=1.                                                                00115300
     23.          00            DO 207 IM=1,3                                                           00115400
     24.          00            L(IP,IM)=1.                                                             00115500
     25.          00            DO 207 IT=1,20                                                          00115600
     26.          00            A(IT,IP,IM)=1.                                                          00115700
     27.          00            U(IT,IP,IM)=1.                                                          00115800
     28.          00            ALHRET(IT,4,IP) = 1.                                                    00115900
     29.          00      207   CONTINUE                                                                00116000
     30.          00      C                                                                             00116100
     31.          00            DO 500 IP = 1,3                                                         00116200
     32.          00      C                                                                             00116300
     33.          00            DO 400 IMODE=1,3                                                        00116400
     34.          00      C                                                                             00116500
     35.          00            IF(IMODE.EQ.3) GO TO 15                                                 00116600
     36.          00      C*****A:  AIR CONDITIONING CORRECTION FACTOR                                  00116700
     37.          00            DO 90 I=1,20                                                            00116800
     38.          00            IMY = CY - (20-I) - 50                                                  00116900
     39.          00            PCW(I)=PCWAC(IMY)                                                       00117000
     40.          00            A(I,IMODE,IP) = AC*PCWAC(IMY)*(ACCF(IP)-1.) + 1.0                       00117100
     41.          00      90    CONTINUE                                                                00117200
     42.          00      C                                                                             00117300
     43.          00             IF(IMODE.EQ.2) GO TO 15                                                 0011740
     44.          00      C*****U:  TRAILER TOWING CORRECTION FACTOR                                    00117500
     45.          00            DO 91 I=1,20                                                            00117600
     46.          00            IMY=CY-(20-I)-50                                                        00117700
     47.          00            IF(IMY.GT.24) GO TO 77                                                  00117800
     48.          00            CFA=TCFA(IP)                                                            00117900
     49.          00            GO TO 78                                                                00118000
     50.          00      77    CONTINUE                                                                00118100
     51.          00            CFA=(PCCOLD*TCFA(IP) + (1.-PCCOLD)*TCFB(IP))/                           00118200
     52.          00           *          (PCCOLD + (1.-PCCOLD)*TCFC(IP))                               00118300
     53.          00      78    CONTINUE                                                                00118400
     54.          00      C                                                                             00118500
     55.          00            U(I,IMODE,IP) = TRAILR*(CFA-1.) + 1.0                                   00118600
     56.          00      C                                                                             00118700
     57.          00      91    CONTINUE                                                                00118800
     58.          00      C                                                                             00118900
     59.          00      C                                                                             00119000
     60.          00      15    CONTINUE                                                                00119100
     61.          00      C*****L:  ADDITIONAL LOADING CORRECTION FACTOR                                00119200
     62.          00            L(IMODE,IP) = XLOAD(IMODE)*(CFLD(IP)-1.) + 1.                           00119300
     63.          00      C                                                                             00119400
     64.          00      400   CONTINUE                                                                00119500
```

```
00         DATA BASE49/                                                    00150700
00        * 4.45,  2.43,  1.13,  0.13,  0.13,  0.13, 0.0 , 0.0 , 0.0 , 0.0 ,00150800
00        * 68.30, 31.14, 18.60,  3.00,  1.40,  1.40, 0.0 , 0.0 , 0.0 , 0.0 ,00150900
00        *  3.58,  4.43,  2.98,  2.42,  1.50,  0.29, 0.0 , 0.0 , 0.0 , 0.0 ,00151000
00        *  4.45,  2.43,  1.11,  0.94,  0.31,  0.31, 0.0 , 0.0 , 0.0 , 0.0 ,00151100
00        * 68.30, 31.14, 16.10, 14.50,  3.87,  3.87, 0.0 , 0.0 , 0.0 , 0.0 ,00151200
00        *  3.58,  4.43,  2.98,  2.45,  1.73,  0.41, 0.0 , 0.0 , 0.0 , 0.0 ,00151300
00        *  5.99,  2.90,  0.94,  0.31,  0.31,  0.31, 0.0 , 0.0 , 0.0 , 0.0 ,00151400
00        * 78.70, 32.40, 14.50,  3.87,  3.87,  3.87, 0.0 , 0.0 , 0.0 , 0.0 ,00151500
00        *  6.49,  5.04,  1.73,  0.41,  0.41,  0.41, 0.0 , 0.0 , 0.0 , 0.0 ,00151600
00        * 23.90, 18.54, 22.02,  5.22,  1.46,  1.46, 0.0 , 0.0 , 0.0 , 0.0 ,00151700
00        *272.90,212.70,218.80,191.90, 15.38, 15.38, 0.0 , 0.0 , 0.0 , 0.0 ,00151800
00        *  8.80, 12.80, 10.50,  9.10,  3.99,  3.99, 0.0 , 0.0 , 0.0 , 0.0 ,00151900
00        *  4.30,  4.50,  4.50,  2.85,  2.85,  2.85, 0.0 , 0.0 , 0.0 , 0.0 ,00152000
00        * 35.10, 27.00, 27.00, 27.00, 27.00, 27.00, 0.0 , 0.0 , 0.0 , 0.0 ,00152100
00        * 21.40, 20.10, 19.90,  5.35,  5.35,  5.35, 0.0 , 0.0 , 0.0 , 0.0 ,00152200
00        *  8.96,  4.70,  3.82,  0.29,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00152300
00        * 34.40, 20.27, 14.86,  2.71,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00152400
00        *  0.14,  0.28,  0.56,  0.04,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 /00152500
00   C                                                                     00152600
00   C***EXHAUST EMISSION FACTOR INTERCEPT: CALIFORNIA                      00152700
00         DATA BASECA/                                                    00152800
00        *  4.45,  2.00,  0.29,  0.15,  0.15,  0.15, 0.0 , 0.0 , 0.0 , 0.0 ,00152900
00        * 68.30, 30.42,  3.80,  3.80,  3.00,  3.00, 0.0 , 0.0 , 0.0 , 0.0 ,00153000
00        *  3.58,  3.92,  3.12,  1.50,  1.10,  0.29, 0.21, 0.0 , 0.0 , 0.0 ,00153100
00        *  4.45,  2.43,  1.11,  0.29,  0.15,  0.15, 0.15, 0.0 , 0.0 , 0.0 ,00153200
00        * 68.30, 31.14, 16.10, 13.70,  3.80,  3.80, 3.80, 0.0 , 0.0 , 0.0 ,00153300
00        *  3.58,  4.43,  2.98,  1.50,  1.28,  0.54, 0.21, 0.0 , 0.0 , 0.0 ,00153400
00        *  5.99,  2.90,  0.29,  0.16,  0.16,  0.16, 0.16, 0.0 , 0.0 , 0.0 ,00153500
00        * 78.70, 32.40, 13.70,  3.80,  3.80,  3.80, 3.80, 0.0 , 0.0 , 0.0 ,00153600
00        *  6.49,  5.04,  1.73,  0.44,  0.44,  0.44, 0.44, 0.0 , 0.0 , 0.0 ,00153700
00        * 23.90, 18.54, 22.02, 18.16,  5.22,  3.50, 1.46, 0.0 , 0.0 , 0.0 ,00153800
00        *272.90,212.70,218.80,209.00,191.90, 15.38,15.38, 0.0 , 0.0 , 0.0 ,00153900
00        *  8.80, 12.80, 10.50,  7.50,  8.04,  6.20, 3.99, 0.0 , 0.0 , 0.0 ,00154000
00        *  4.30,  4.50,  4.50,  2.85,  2.85,  2.85, 2.85, 0.0 , 0.0 , 0.0 ,00154100
00        * 35.10, 27.00, 27.00, 27.00, 27.00, 27.00,27.00, 0.0 , 0.0 , 0.0 ,00154200
00        * 21.40, 20.10, 18.61, 16.30,  5.35,  5.35, 5.35, 0.0 , 0.0 , 0.0 ,00154300
00        *  8.96,  4.70,  3.82,  0.82,  0.29,  0.29, 0.29, 0.29, 0.29, 0.29,00154400
00        * 34.40, 20.27, 14.86,  2.71,  2.71,  2.71, 2.71, 2.71, 2.71, 2.71,00154500
00        *  0.14,  0.28,  0.56,  0.04,  0.04,  0.04, 0.04, 0.04, 0.04, 0.04/00154600
00   C                                                                     00154700
00   C***EXHAUST EMISSION FACTOR INTERCEPT: HIGH ALTITUDE                   00154800
00         DATA BASEHI/                                                    00154900
00        *  6.03,  4.07,  1.83,  0.70,  1.83,  0.21, 0.21, 0.13, 0.13, 0.13,00155000
00        *110.04, 76.73, 38.31, 10.30, 38.31,  6.18, 2.88, 1.40, 1.40, 1.40,00155100
00        *  1.96,  3.00,  1.94,  1.50,  1.90,  1.50, 0.93, 0.18, 0.29, 0.29,00155200
00        *  6.03,  4.07,  1.79,  1.11,  1.79,  1.52, 0.47, 0.31, 0.0 , 0.0 ,00155300
00        *110.04, 76.73, 33.15, 16.10, 33.15, 29.90, 8.00, 3.87, 0.0 , 0.0 ,00155400
00        *  1.96,  3.00,  1.94,  1.52,  2.45,  1.52, 1.07, 1.73, 0.41, 0.0 ,00155500
00        *  8.12,  4.86,  1.52,  0.47,  0.31,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00155600
00        *127.30, 79.90, 29.90,  8.00,  3.87,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00155700
00        *  3.55,  3.41,  1.07,  1.73,  0.41,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00155800
00        * 32.40, 31.05, 36.77,  8.74,  2.35,  1.46, 0.0 , 0.0 , 0.0 , 0.0 ,00155900
00        *441.50,344.20,353.20,310.90, 31.70, 15.38, 0.0 , 0.0 , 0.0 , 0.0 ,00156000
00        *  4.82,  8.67,  6.84,  5.92,  5.64,  3.99, 0.0 , 0.0 , 0.0 , 0.0 ,00156100
00        *  5.80,  6.10,  6.10,  3.85,  2.85,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156200
00        * 56.80, 43.70, 43.70, 43.70, 27.00,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156300
00        * 11.80, 13.10, 12.90,  5.35,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00156400
00        * 12.10,  7.97,  6.38,  0.45,  0.29,  0.29, 0.29, 0.29, 0.29, 0.29,00156500
00        * 47.10, 27.80, 20.40,  5.58,  2.71,  2.71, 2.71, 2.71, 2.71, 2.71,00156600
00        *  0.08,  0.18,  0.36,  0.03,  0.04,  0.04, 0.04, 0.04, 0.04,  0.0/00156700
00   C                                                                     00156800
00   C***EXHAUST EMISSION FACTOR SLOPE: 49 STATE                            00156900
00         DATA DEL49/                                                     00157000
00        * 0.58, 0.53, 0.23, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,     00157100
00        * 3.06, 6.15, 2.80, 2.30, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,     00157200
```

*** CO2 ***

```
@ELT,L CEM.DISPRS
ELT 8R1 S7401C 04/23/82 15:44:51 (0)
```

*** C03 ***

```
      1.          00            SUBROUTINE DISPRS
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE CONTROLS COMPUTATION OF DISPERSION OF PATHWAY
      5.          00      C     SOURCE EMISSIONS ACCORDING TO WHETHER A PATHWAY IS OR OS NOT A
      6.          00      C     STREET CANYON.  THE ROUTINE ALSO CONTROLS COMPUTATION OF
      7.          00      C     DISPERSION OF NON-PATHWAY SOURCE EMISSIONS
      8.          00      C
      9.          00      C
     10.          00            COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     11.          00           1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     12.          00            COMMON/LSTSEG/CNPLST(5,3)
     13.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     14.          00            COMMON/RUNTYP/MODRUN
     15.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     16.          00            COMMON/NOSTRT/EXNSAM(5,80,3),EXNSPM(5,80,3)
     17.          00            COMMON/METST/WS,IWD,ISTAB
     18.          00            COMMON/STRT/EXST(5,3,2)
     19.          00            DIMENSION C(2,80,3),TT(2)
     20.          00            DO 5 IPATH=1,NPATHS
     21.          00            DO 3 IAMPM=1,2
     22.          00       3    TOTTT(IPATH,IAMPM)=0.0
     23.          00            DO 5 IP=1,2
     24.          00            DO 4 IAMPM=1,2
     25.          00       4    EXST(IPATH,IP,IAMPM)=0.0
     26.          00            DO 5 ISTWD=1,80
     27.          00            EXNSAM(IPATH,ISTWD,IP)=0.0
     28.          00       5    EXNSPM(IPATH,ISTWD,IP)=0.0
     29.          00      C
     30.          00      C     COMPUTE DISPERSION OF PATHWAY SOURCE EMISSIONS
     31.          00      C
     32.          00            IF(MODRUN.EQ.2) GO TO 60
     33.          00      C
     34.          00      C     MODEL IS IN ANNUAL MODE
     35.          00            DO 50 IPATH=1,NPATHS
     36.          00            NSEGS=NSEG(IPATH)
     37.          00            DO 50 LINK=1,NSEGS
     38.          00            DO 10 IAMPM=1,2
     39.          00            TT(IAMPM)=(TT1(IPATH,LINK,IAMPM)+TT2(IPATH,LINK,IAMPM))*60.
     40.          00      10    TOTTT(IPATH,IAMPM)=TOTTT(IPATH,IAMPM)+TT(IAMPM)
     41.          00      C
     42.          00      C     DETERMINE IF SEGMENT IS A STREET CANYON OR NOT AND CALL APPRO-
     43.          00      C     PRIATE DISPERSION ROUTINE
     44.          00            IF(LINTOP(IPATH,LINK).EQ.2) GO TO 20
     45.          00      C
     46.          00      C     SEGMENT IS NOT A STREET CANYON--COMPUTE AND SUM NORMALIZED
     47.          00      C     EXPOSURES
     48.          00            CALL ROAD(2,16,1,5,3,IPATH,LINK,C)
     49.          00      C
     50.          00      C
     51.          00      C     IF MORE POLLUTANTS ARE TO BE INCLUDED, A POLLUTANT DO LOOP MUST BE
     52.          00      C     ADDED AND THE CONCENTRATION ARRAY IN ROAD AND THE EXPOSURE ARRAYS
     53.          00      C     HERE MUST BE CHANGED TO ACCOMMODATE THE ADDITIONAL POLLUTANTS.
     54.          00      C     THIS WAS NOT DONE BECAUSE OF STORAGE LIMITATIONS
     55.          00      C
     56.          00      C
     57.          00            DO 15 IWSTEM=1,3
     58.          00            DO 15 ISTWD=1,80
     59.          00      C     UNITS OF EXPOSURE EXNSAM ARE G/M**2
     60.          00            EXNSAM(IPATH,ISTWD,IWSTEM)=EXNSAM(IPATH,ISTWD,IWSTEM)+C(1,ISTWD,
     61.          00           1IWSTEM)*TT(1)
     62.          00      15    EXNSPM(IPATH,ISTWD,IWSTEM)=EXNSPM(IPATH,ISTWD,IWSTEM)+C(2,ISTWD,
     63.          00           1IWSTEM)*TT(2)
     64.          00            GO TO 50
```

```
     65.          00      C          NOPT3                    IS THE PATHWAY NUMBER FOR WHICH OPTION 3 WAS
     66.          00      C                                   CHOSEN.
     67.          00      C          NMET(IOPT3)              IS THE NUMBER OF THE IOPT3-TH SET OF METEOROLO-
     68.          00      C                                   GICAL CONDITIONS FOR WHICH OPTION 3 WAS CHOSEN.
     69.          00      C          COM01A(IC,IP,KP1)        IS THE PERCENTAGE OF COMMUTERS IN CLASS IC FOR
     70.          00      C                                   POLLUTANT IP ON THE KP1-TH PATHWAY CHOSEN FOR
     71.          00      C                                   OPTION 1 OUTPUT FOR THE AM COMMUTE.
     72.          00      C          COM01P(IC,IP,KP1)        IS THE PERCENTAGE OF COMMUTERS IN CLASS IC FOR
     73.          00      C                                   POLLUTANT IP ON THE KP1-TH PATHWAY CHOSEN FOR
     74.          00      C                                   OPTION 1 OUTPUT FOR THE PM COMMUTE.
     75.          00      C          CMN02A(IC,IP,KP2)        IS THE PROBABILITY OF EXPERIENCING EXPOSURE
     76.          00      C                                   LEVELS IN CLASS IC FOR POLLUTANT IP ON THE
     77.          00      C                                   KP2-TH PATHWAY CHOSEN FOR OPTION 2 OUTPUT FOR
     78.          00      C                                   THE AM COMMUTE.
     79.          00      C          CMN02P(IC,IP,KP2)        IS THE PROBABILITY OF EXPERIENCING EXPOSURE
     80.          00      C                                   LEVELS IN CLASS IC FOR POLLUTANT IP ON THE
     81.          00      C                                   KP2-TH PATHWAY CHOSEN FOR OPTION 2 OUTPUT FOR
     82.          00      C                                   THE PM COMMUTE.
     83.          00      C          EXP3(IOPT3,IP,IAMPM)     IS THE EXPOSURE ON PATHWAY NOPT3 FOR POLLU-
     84.          00      C                                   TANT IP FOR TIME PERIOD IAMPM FOR THE IOPT3-TH
     85.          00      C                                   SET OF METEOROLOGICAL CONDITIONS CHOSEN WITH
     86.          00      C                                   OPTION 3.
     87.          00      C          KP1                      IS THE INDEX FOR PATHWAYS CHOSEN WITH OPTION 1.
     88.          00      C          KP2                      IS THE INDEX FOR PATHWAYS CHOSEN WITH OPTION 2.
     89.          00      C          IOPT3                    IS THE INDEX FOR METEOROLOGICAL CONDITIONS
     90.          00      C                                   CHOSEN WITH OPTION 3.
     91.          00      C
     92.          00      C
     93.          00      C          TO CONSTRUCT THE HISTOGRAMS
     94.          00      C
     95.          00      C
     96.          00      C          THE VALUE LIMITS OF THE EXPOSURE CLASSES SHOULD BE PLOTTED ON THE
     97.          00      C          ABSCISSA.
     98.          00      C          THE PERCENTAGE OF COMMUTERS OR THE PROBABILITIES SHOULD BE INDICA-
     99.          00      C          TED ON THE ORDINATE BY COLUMN HEIGHT.
    100.          00      C
    101.          00      C
    102.          00      C          WHEN THIS SUBROUTINE IS CALLED, THE FOLLOWING MESSAGE IS PRINTED.
    103.          00      C
    104.          00                 WRITE(IWRI,15)
    105.          00           15    FORMAT(1H1,2X,64HDUE TO COMPUTER-MAKE INCOMPATIBILITIES, SUBROUTIN
    106.          00          1E GRAF DOES NOT,27H ATTEMPT TO PLOT HISTOGRAMS,/,3X,58HHOWEVER, GR
    107.          00          2AF DOES CONTAIN THE NECESSARY COMMON STATEMENTS,45H AND INSTRUCTIO
    108.          00          3NS FOR THE USER TO SUPPLY PLOTTING CODE TO PRODUCE/3X,15H THE HIST
    109.          00          4OGRAMS)
    110.          00                 RETURN
    111.          00                 END

END ELT.  ERRORS: NONE. TIME:  0.363 SEC. IMAGE COUNT: 111

$HDG,P  ******  INDATA  ******
```

*** C04 ***

```
*** C05 ***                                                                                                    *** C05 ***
@ELT L CEM.LDVIMX
ELT BR1 $7401C 04/23/82 15:45:03 (0)
      1.          00          SUBROUTINE LDVIMX(CY)
      2.          00      C
      3.          00            COMMON/BEFCOM/BEF(20,1,18)                                                    00114200
      4.          00            COMMON/IMCOM/ICYIM,ISTRN,IMTFLG,MODYR1,MODYR2                                 00114400
      5.          00            INTEGER CYP
      6.          00            COMMON/IMCRED/PCIM                                                            00114500
      7.          00      C
      8.          00            INTEGER CY,CYIMP,CYIP1,DELY,DEL2,DEL                                          00114600
      9.          00            INTEGER PCIM(19,5,   16)                                                      00114700
     10.          00      C**IN PCIM: DEL,ISTRIN,ITECH,IPROGM,IPOL                                            00114800
     11.          00      C                                                                                   00114900
     12.          00      C*******************************************************************************  00115000
     13.          00      C                                                                                   00115100
     14.          00            IPROGM = 1 + IMTFLG                                                           00115200
     15.          00            IF(ISTRN.LT.10.OR.ISTRN.GT.50) STOP600                                        00115300
     16.          00            IREM=ISTRN-(ISTRN/10)*10
     17.          00            REM=IREM*.1
     18.          00            STRN=(ISTRN+0.5)*0.1
     19.          00            ISTRIN=STRN
     20.          00            CYIMP = ICYIM
     21.          00            CYIP1 = ICYIM + 1                                                             00115500
     22.          00      C                                                                                   00115600
     23.          00            DO 100 IPOL=1,2                                                               00115700
     24.          00      C                                                                                   00115800
     25.          00            CYP=1                                                                         00116000
     26.          00                 DELY = CY - CYIMP
     27.          00      C                                                                                   00116200
     28.          00            DO 90 I = 1,20                                                                00116300
     29.          00               MY = CY - (20-I)                                                           00116400
     30.          00               MYP = MY - 50                                                              00116500
     31.          00               DEL2 = MY - CYIMP                                                          00116600
     32.          00      C                                                                                   00116700
     33.          00            IF(MY.LT.MODYR1.OR.MY.GT.MODYR2) GO TO 90                                     00116800
     34.          00      C                                                                                   00116900
     35.          00            IF(MY.LE.CYIMP) DEL = DELY                                                    00117000
     36.          00            IF(MY.GT.CYIMP) DEL = DELY - DEL2                                             00117100
     37.          00            IF(DEL.GT.19) DEL = 19                                                        00117200
     38.          00      C                                                                                   00117300
     39.          00      C*NOW DEL IS INDEX FOR I/M AND MECH. TRAINING                                       00117400
     40.          00      C*TEST FOR TECH. I, II, III, OR IV                                                  00117500
     41.          00            DO 80 IMOD=1,4                                                                00117600
     42.          00            IMODE=IMOD
     43.          00            IF(IMOD.EQ.4)IMODE=6
     44.          00            IF(IMOD.EQ.2)GO TO 72
     45.          00            IF(IMOD.EQ.3) GO TO 72
     46.          00            IF(IMOD.EQ.4) GO TO 74
     47.          00            IF(MY.LT.75) ITECH = 1
     48.          00            IF(MY.GE.75.AND.MY.LE.79) ITECH = 2                                           00117700
     49.          00            IF(MY.EQ.80) ITECH = 3                                                        00117800
     50.          00            IF(MY.GE.81) ITECH = 4                                                        00117900
     51.          00            GO TO 77                                                                      00118000
     52.          00      72    CONTINUE
     53.          00            IF(MY.LT.83) ITECH=1
     54.          00            IF(MY.GT.82) ITECH=2
     55.          00            GO TO 77
     56.          00      74    CONTINUE
     57.          00            ITECH=1
     58.          00      77    CONTINUE
     59.          00
     60.          00            IF(DEL.EQ.0) PCRED = 0.0                                                      00118200
     61.          00            IF(DEL.GT.0.AND.ISTRIN.LT.5)
     62.          00           *          PCRED=PCIM(DEL,ISTRIN,ITECH+(IPROGM-1)*4+(IPOL-1)*8)
     63.          00           *  *.01 +REM*(PCIM(DEL,ISTRIN+1,ITECH+(IPROGM-1)*4+(IPOL-1)*8)-
     64.          00           *PCIM(DEL,ISTRIN,ITECH+(IPROGM-1)*4+(IPOL-1)*8))*.01
```

```
@ELT,L CEM.NPATHD
ELT 8R1 S74Q1C 04/23/82 15:45:14 (0)
```

*** C06 ***

```
      1.            00                SUBROUTINE NPATHD
      2.            00        C
      3.            00        C
      4.            00        C       THIS SUBROUTINE COMPUTES THE PORTION OF NORMALIZED EXPOSURE ON
      5.            00        C       EACH PATHWAY SEGMENT ARISING FROM NON-PATHWAY POLLUTANT SOURCES
      6.            00        C
      7.            00        C
      8.            00                COMMON/RUNTYP/MODRUN
      9.            00                COMMON/METST/WS,IWD,ISTAB
     10.            00                COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
     11.            00                COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     12.            00                COMMON/GRID/XG(500),YG(500),GVMT(500),IGLOC(500),GEMIS(500),
     13.            00               1GSIZE(500)
     14.            00                COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     15.            00                COMMON/IO/IREAD,IWRI,IFILE
     16.            00                COMMON/NOPATH/EXNPAM(5,5,3),EXNPPM(5,5,3)
     17.            00                COMMON/LSTSEG/CNPLST(5,5)
     18.            00                COMMON/GREMIS/EGRID(500,3,2)
     19.            00                COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     20.            00                DIMENSION CONST(5),JGRID1(5,20),JGRID2(5,20),JGRIDM(
     21.            00               15,20)
     22.            00                DATA CONST/50.,50.,200.,225.,600./
     23.            00        C
     24.            00        C       INITIALIZE EXPOSURE ARRAYS
     25.            00                IF(MODRUN.EQ.1) GO TO 6
     26.            00                DO 5 IPATH=1,NPATHS
     27.            00                DO 5 IP=2,2
     28.            00         5      EXNPAM(IPATH,1,IP)=0.
     29.            00                GO TO 15
     30.            00         6      DO 10 IS=1,5
     31.            00                DO 10 IPATH=1,NPATHS
     32.            00                DO 10 IP=2,2
     33.            00                EXNPAM(IPATH,IS,IP)=0.
     34.            00                EXNPPM(IPATH,IS,IP)=0.
     35.            00        10      CONTINUE
     36.            00        C
     37.            00        C       LOCATE GRID SQUARES IN WHICH END POINTS AND MIDPOINT OF EACH
     38.            00        C       SEGMENT LIE
     39.            00        C
     40.            00        15      DO 100 IPATH=1,NPATHS
     41.            00                NSEGS=NSEG(IPATH)
     42.            00                DO 80 LINK=1,NSEGS
     43.            00                JGRID1(IPATH,LINK)=0
     44.            00                JGRID2(IPATH,LINK)=0
     45.            00                JGRIDM(IPATH,LINK)=0
     46.            00        C       COMPUTE MIDPOINT OF SEGMENT
     47.            00                XMID=(X1(IPATH,LINK)+X2(IPATH,LINK))*CONVRT*.8046
     48.            00                YMID=(Y1(IPATH,LINK)+Y2(IPATH,LINK))*CONVRT*.8046
     49.            00        C       SORT THROUGH GRID SQUARES
     50.            00                DO 70 IG=1,NGRID
     51.            00                XGPLUS=XG(IG)*CONVRT*1.6093+0.0001+GSIZE(IG)
     52.            00                YGPLUS=YG(IG)*CONVRT*1.6093+0.0001+GSIZE(IG)
     53.            00                XTEMP1=X1(IPATH,LINK)*CONVRT*1.6093
     54.            00                YTEMP1=Y1(IPATH,LINK)*CONVRT*1.6093
     55.            00                XTEMP2=X2(IPATH,LINK)*CONVRT*1.6093
     56.            00                YTEMP2=Y2(IPATH,LINK)*CONVRT*1.6093
     57.            00                XGTEMP=XG(IG)*CONVRT*1.6093-0.0001
     58.            00                YGTEMP=YG(IG)*CONVRT*1.6093-0.0001
     59.            00                IF(JGRID1(IPATH,LINK).NE.0) GO TO 61
     60.            00                IF(XTEMP1.LT.XGTEMP.OR.XTEMP1.GT.XGPLUS) GO TO 61
     61.            00                IF(YTEMP1.LT.YGTEMP.OR.YTEMP1.GT.YGPLUS) GO TO 61
     62.            00                JGRID1(IPATH,LINK)=IG
     63.            00         61     IF(JGRID2(IPATH,LINK).NE.0) GO TO 62
     64.            00                IF(XTEMP2.LT.XGTEMP.OR.XTEMP2.GT.XGPLUS) GO TO 62
```

```
*** C07 ***                                                                                                    *** C07 ***
   197.            00      C
   198.            00      C     MODEL IS IN SHORT-TERM MODE
   199.            00      C
   200.            00       136  READ(IREAD,134) (JCOLDN(L),L=1,5),(JCOLDC(L),L=1,5),(JHOT(L),L=1,5
   201.            00           1)
   202.            00           DO 137 L=1,5
   203.            00           IF(JCOLDN(L).LT.0.OR.JCOLDN(L).GT.100) GO TO 138
   204.            00           IF(JCOLDC(L).LT.0.OR.JCOLDC(L).GT.100) GO TO 138
   205.            00           IF(JHOT(L).LT.0.OR.JHOT(L).GT.100) GO TO 138
   206.            00       137 CONTINUE
   207.            00           GO TO 144
   208.            00       138 WRITE(IWRI,139)
   209.            00       139 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 4P)
   210.            00           ISTOP=1
   211.            00           WRITE(IWRI,1010)
   212.            00      C
   213.            00      C
   214.            00      C     READ AND EDIT CARD TYPE 5P
   215.            00      C
   216.            00      C
   217.            00       140 READ(IREAD,134) (JCLDNP(L),L=1,5),(JCLDCP(L),L=1,5),(JHOTP(L),
   218.            00           1L=1,5)
   219.            00           DO 141 L=1,5
   220.            00           IF(JCLDNP(L).LT.0.OR.JCLDNP(L).GT.100) GO TO 142
   221.            00           IF(JCLDCP(L).LT.0.OR.JCLDCP(L).GT.100) GO TO 142
   222.            00           IF(JHOTP(L).LT.0.OR.JHOTP(L).GT.100) GO TO 142
   223.            00       141 CONTINUE
   224.            00           GO TO 144
   225.            00       142 WRITE(IWRI,143)
   226.            00       143 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 5P)
   227.            00           ISTOP=1
   228.            00           WRITE(IWRI,1010)
   229.            00      C
   230.            00      C
   231.            00      C     READ AND EDIT CARD TYPE 6P
   232.            00      C
   233.            00      C
   234.            00       144 IF(IMFLAG.EQ.0) GO TO 148
   235.            00           READ(IREAD,145) IMYEAR,IMSTRG,IMMECH,IMBEG,IMEND
   236.            00       145 FORMAT(3X,2I2,1X,I1,2I2)
   237.            00           IF(IMYEAR.LT.70.OR.IMYEAR.GT.99) GO TO 146
   238.            00           IF(IMSTRG.LT.10.OR.IMSTRG.GT.50) GO TO 146
   239.            00           IF(IMMECH.NE.0.AND.IMMECH.NE.1) GO TO 146
   240.            00           IF(IMBEG.LT.51.OR.IMBEG.GT.99) GO TO 146
   241.            00           IF(IMEND.LT.52.OR.IMEND.GT.99) GO TO 146
   242.            00           GO TO 148
   243.            00       146 WRITE(IWRI,147)
   244.            00       147 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 6P)
   245.            00           ISTOP=1
   246.            00           WRITE(IWRI,1010)
   247.            00       148 IF(ISTOP.EQ.1) STOP
   248.            00       149 CONTINUE
   249.            00           RETURN
   250.            00           END

END ELT.  ERRORS: NONE. TIME:  0.487 SEC. IMAGE COUNT: 250

@HDG,P  ******  ROAD  ******
```

```
@ELT,L CEM.STATIS
ELT 8R1 S7491C 04/23/82 15:45:27 (5)
      1.          01          SUBROUTINE STATIS
      2.          01    C
      3.          01    C
      4.          01    C     THIS SUBROUTINE COMPUTES THE MODEL OUTPUT STATISTICS FOR THE
      5.          01    C     ANNUAL MODE OF OPERATION
      6.          01    C
      7.          01    C
      8.          01          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
      9.          01          COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     10.          01          COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     11.          01         1JOPT3
     12.          01          COMMON/STRT/EXST(5,3,2)
     13.          01          COMMON/NOPATH/EXNPAM(5,5,3),EXNPPM(5,5,3)
     14.          01          COMMON/NOSTRT/EXNSAM(5,80,3),EXNSPM(5,80,3)
     15.          01          COMMON/OPOUT/COMO1A(10,5,5),COMO1P(10,3,5),CMNO2A(10,3,5),
     16.          01         1CMNO2P(10,3,5),EXP3(10,3,2)
     17.          01          COMMON/NOCOMM/NCOMM(5,2)
     18.          01          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     19.          01          COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     20.          01         1EXPSUM(3,2),AVCONC(3,5,2)
     21.          01          COMMON/PART/EXPP(5,3,2),EXPNP(5,3,2)
     22.          01          DIMENSION GREXP(3),NWS3(10),NWD3(10),NSTAB3(10)
     23.          01    C
     24.          01    C     FIND LARGEST EXPOSURE AND INITIALIZE SOME ARRAYS
     25.          01          DO 10 IP=2,2
     26.          01          DO 7 IC=1,10
     27.          01          DO 5 IAMPM=1,2
     28.          01          COMSUM(IC,IP,IAMPM)=0.
     29.          01     5    CMNSUM(IC,IP,IAMPM)=0.
     30.          01          DO 6 KP=1,5
     31.          01          COMO1A(IC,IP,KP)=0.
     32.          01          COMO1P(IC,IP,KP)=0.
     33.          01          CMNO2A(IC,IP,KP)=0.
     34.          01     6    CMNO2P(IC,IP,KP)=0.
     35.          01     7    CONTINUE
     36.          01          DO 8 IAMPM=1,2
     37.          01     8    EXPSUM(IP,IAMPM)=0.
     38.          01          GREXP(IP)=0.
     39.          01          DO 10 IPATH=1,NPATHS
     40.          01          DO 9 IAMPM=1,2
     41.          01          EXP(IPATH,IP,IAMPM)=0.
     42.          01          EXPP(IPATH,IP,IAMPM)=0.
     43.          01     9    EXPNP(IPATH,IP,IAMPM)=0.
     44.          01          DO 10 ISTWD=1,80
     45.          01          ISTAB=(ISTWD+15)/16
     46.          01    C     NOTE NON-STREET CANYON EXPOSURE ARRAY IS DIMENSIONED FOR CO ONLY
     47.          01          TEXPAM=EXNSAM(IPATH,ISTWD,1)+EXNPAM(IPATH,ISTAB,IP)+EXST(IPATH,IP,
     48.          01         11)/1.5
     49.          01          TEXPPM=EXNSPM(IPATH,ISTWD,1)+EXNPPM(IPATH,ISTAB,IP)+EXST(IPATH,IP,
     50.          01         12)/1.5
     51.          01          IF(TEXPAM.GT.GREXP(IP)) GREXP(IP)=TEXPAM
     52.          01          IF(TEXPPM.GT.GREXP(IP)) GREXP(IP)=TEXPPM
     53.          01    10    CONTINUE
     54.          01    C
     55.          01    C     BASED ON MAX EXPOSURE VALUE, DETERMINE VALUE LIMITS ON EXPOSURE
     56.          01    C     CLASSES
     57.          01          DO 35 IP=2,2
     58.          01          IF(GREXP(IP).LT.1.0) GO TO 30
     59.          01          IF(GREXP(IP).LE..0.0) GO TO 25
     60.          01          DUM=GREXP(IP)
     61.          01          DO 22 II=1,10
     62.          01          DUM=DUM/10.
     63.          01          IF(DUM.GT.10.) GO TO 22
     64.          01          IF(DUM.EQ.10.) GO TO 21
```

*** CO8 ***

```
*** C09 ***                                                                    *** C09 ***
@ELT,L CEM.TFCALX
ELT BR1 S7401C 04/23/82 15:45:33 (0)
     1.          00            SUBROUTINE TFCALX                                  00076500
     2.          00      C                                                        00076600
     3.          00            COMMON/MYMCOM/MYM,MYR,TF                           00076700
     4.          00            REAL TFNORM(6),MYM(20,6),MYR(20,6),TF(20,6)        00076800
     5.          00      C                                                        00076900
     6.          00            DO 850 M = 1,6                                     00077000
     7.          00               TFNORM(M) = 0.0                                 00077100
     8.          00               DO 810 I = 1,20                                 00077200
     9.          00      810         TFNORM(M) = TFNORM(M) + MYM(I,M)*MYR(I,M)    00077300
    10.          00               DO 820 I = 1,20                                 00077400
    11.          00      820         TF(21-I,M) = ( MYM(I,M)*MYR(I,M) )/TFNORM(M) 00077500
    12.          00      C                                                        00077600
    13.          00      850   CONTINUE                                           00077700
    14.          00      C                                                        00077800
    15.          00            RETURN                                             00077900
    16.          00      C                                                        00078000
    17.          00      C                                                        00078100
    18.          00            END                                                00078200
                                                                                  00078300
END ELT.  ERRORS: NONE. TIME:  0.211 SEC. IMAGE COUNT: 18

@HDG,P  ******  TRAF  ******
```

```
*** D01 ***                                                                                                    *** D01 ***
    65.          00      500   CONTINUE                                                                  00119600
    66.          00      C*****H:  HUMIDITY CORRECTION FACTOR                                            00119700
    67.          00            DO 675 IMODE=1,3                                                          00119800
    68.          00            H(IMODE) = 1. - .0047*(ABSHUM - 75.)                                      00119900
    69.          00      675   CONTINUE                                                                  00120000
    70.          00      C                                                                               00120100
    71.          00      C                                                                               00120200
    72.          00            DO 800 IP=1,3                                                             00120300
    73.          00            DO 800 IMODE=1,3                                                          00120400
    74.          00            DO 800 IY=1,20                                                            00120500
    75.          00            ALHTMP = A(IY,IMODE,IP)*U(IY,IMODE,IP)*L(IMODE,IP)                        00120600
    76.          00            IF(IP.EQ.3) ALHTMP = ALHTMP*H(IMODE)                                      00120700
    77.          00      C     ALHRET(IY,IMODE,IP) = ALHTMP
    78.          00            ALHRET(21-IY,IMODE,IP)=A(IY,IMODE,IP)
    79.          00      800   CONTINUE                                                                  00120900
    80.          00      C                                                                               00121000
    81.          00            RETURN                                                                    00121100
    82.          00      C     DEBUG SUBCHK                                                              00121200
    83.          00            END                                                                       00121300

END ELT.  ERRORS: NONE. TIME:  0.350 SEC. IMAGE COUNT: 83

@HDG,P  ******  ANNOUT  ******
```

```
197.   00          * 0.0 , 0.0 , 0.0 , 0.08, 0.16, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157300
198.   00          * 0.58, 0.53, 0.41, 0.41, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157400
199.   00          * 3.06, 6.15, 5.34, 5.34, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157500
200.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.11, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157600
201.   00          * 0.58, 0.53, 0.41, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157700
202.   00          * 3.06, 6.15, 5.34, 2.00, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157800
203.   00          * 0.0 , 0.0 , 0.11, 0.22, 0.22, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00157900
204.   00          * 0.58, 0.53, 0.53, 0.53, 0.22, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00158000
205.   00          * 3.06, 6.15, 6.15, 6.15,10.54,10.54, 0.0 , 0.0 , 0.0 , 0.0 ,                    00158100
206.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.34, 0.34, 0.0 , 0.0 , 0.0 , 0.0 ,                    00158200
207.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00158300
208.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00158400
209.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00158500
210.   00          * 1.17, 1.03, 1.03, 0.23, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00158600
211.   00          * 1.54, 4.00, 4.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00158700
212.   00          * 0.0 , 0.0 , 0.0 , 0.22, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 /                   00158800
213.   00    C                                                                                       00158900
214.   00    C***EXHAUST EMISSION FACTOR SLOPE: CALIFORNIA                                           00159000
215.   00          DATA DELCA/                                                                       00159100
216.   00          * 0.58, 0.70, 0.23, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159200
217.   00          * 3.06, 6.40, 2.33, 2.33, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159300
218.   00          * 0.0 , 0.0 , 0.0 , 0.16, 0.16, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159400
219.   00          * 0.58, 0.53, 0.41, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159500
220.   00          * 3.06, 6.15, 5.34, 5.34, 2.33, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159600
221.   00          * 0.0 , 0.0 , 0.0 , 0.11, 0.22, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159700
222.   00          * 0.58, 0.53, 0.53, 0.23, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159800
223.   00          * 3.06, 6.15, 5.34, 2.00, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 ,                    00159900
224.   00          * 0.0 , 0.0 , 0.11, 0.22, 0.22, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00160000
225.   00          * 0.58, 0.53, 0.53, 0.53, 0.53, 0.22, 0.0 , 0.0 , 0.0 , 0.0 ,                    00160100
226.   00          * 3.06, 6.15, 6.15, 6.15, 6.15,10.54, 0.0 , 0.0 , 0.0 , 0.0 ,                    00160200
227.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.34, 0.0 , 0.0 , 0.0 , 0.0 ,                    00160300
228.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00160400
229.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00160500
230.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00160600
231.   00          * 0.58, 0.53, 0.53, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23,                    00160700
232.   00          * 3.06, 6.15, 6.15, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00,                    00160800
233.   00          * 0.0 , 0.0 , 0.0 , 0.22, 0.22, 0.22, 0.22, 0.22, 0.22, 0.22 /                   00160900
234.   00    C                                                                                       00161000
235.   00    C***EXHAUST EMISSION FACTOR SLOPE: HIGH ALTITUDE                                        00161100
236.   00          DATA CELHI/                                                                       00161200
237.   00          * 0.55, 0.55, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23,                    00161300
238.   00          * 2.81, 4.24, 2.80, 2.80, 2.80, 2.30, 2.00, 2.00, 2.00, 2.00,                    00161400
239.   00          * 0.0 , 0.0 , 0.0 , 0.08, 0.16, 0.16, 0.16, 0.22, 0.22, 0.22,                    00161500
240.   00          * 0.55, 0.55, 0.41, 0.41, 0.41, 0.41, 0.23, 0.23, 0.0 , 0.0 ,                    00161600
241.   00          * 2.81, 4.24, 5.34, 5.34, 5.34, 5.34, 2.00, 2.00, 0.0 , 0.0 ,                    00161700
242.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.11, 0.22, 0.0 ,                    00161800
243.   00          * 0.55, 0.55, 0.41, 0.23, 0.23, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00161900
244.   00          * 2.81, 4.24, 5.34, 2.00, 2.00, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00162000
245.   00          * 0.0 , 0.0 , 0.11, 0.11, 0.22, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00162100
246.   00          * 0.55, 0.55, 0.55, 0.55, 1.06, 1.06, 0.0 , 0.0 , 0.0 , 0.0 ,                    00162200
247.   00          * 2.81, 4.24, 4.24, 4.24,10.54,10.54, 0.0 , 0.0 , 0.0 , 0.0 ,                    00162300
248.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.34, 0.34, 0.0 , 0.0 , 0.0 , 0.0 ,                    00162400
249.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00162500
250.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00162600
251.   00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00162700
252.   00          * 0.55, 0.55, 0.55, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23, 0.23,                    00162800
253.   00          * 2.81, 4.24, 4.24, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00, 2.00,                    00162900
254.   00          * 0.0 , 0.0 , 0.0 , 0.22, 0.22, 0.22, 0.22, 0.22, 0.22, 0.22 /                   00163000
255.   00    C                                                                                       00163100
256.   00    C                                                                                       00164000
257.   00    C***IDLE EMISSION FACTOR INTERCEPT: 49 STATE                                            00164100
258.   00          DATA IDLB49/                                                                      00164200
259.   00          * 2.01, 0.46, 0.27, 0.03, 0.07, 0.07, 0.0 , 0.0 , 0.0 , 0.0 ,                    00164300
260.   00          * 16.42, 12.73, 3.43, 0.86, 0.41, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                  00164400
261.   00          * 0.19, 0.26, 0.16, 0.34, 0.25, 0.04, 0.2 , 0.0 , 0.0 , 0.0 ,                    00164500
262.   00          * 2.11, 0.68, 0.28, 0.24, 0.08, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,                    00164600
```

*** D02 ***

```
    65.          00      C
    66.          00      C      SEGMENT IS A STREET CANYON
    67.          00       20    CALL STREET(IPATH,LINK,TT)
    68.          00       50    CONTINUE
    69.          00             GO TO 100
    70.          00      C
    71.          00      C      MODEL IS IN SHORT-TERM MODE
    72.          00       60    DO 80 IPATH=1,NPATHS
    73.          00             NSEGS=NSEG(IPATH)
    74.          00             DO 80 LINK=1,NSEGS
    75.          00             IF(IBOUND.EQ.2) TT1(IPATH,LINK,1)=TT1(IPATH,LINK,2)
    76.          00             IF(IBOUND.EQ.2) TT2(IPATH,LINK,1)=TT2(IPATH,LINK,2)
    77.          00             TT(1)=(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1))*60.
    78.          00             TOTTT(IPATH,1)=TOTTT(IPATH,1)+TT(1)
    79.          00      C
    80.          00      C      DETERMINE IF SEGMENT IS A STREET CANYON OR NOT AND CALL APPRO-
    81.          00      C      PRIATE DISPERSION ROUTINE
    82.          00             IF(LINTOP(IPATH,LINK).EQ.2) GO TO 70
    83.          00      C
    84.          00      C      SEGMENT IS NOT A STREET CANYON--COMPUTE AND SUM EXPOSURES
    85.          00      C
    86.          00      C      SEE COMMENT FOLLOWING CALL OF ROAD IN ANNUAL MODE COMPUTATIONS
    87.          00             CALL ROAD(1,1,ISTAB,ISTAB,1,IPATH,LINK,C)
    88.          00      C      UNITS OF EXPOSURE EXNSAM ARE G-SEC/M**3
    89.          00             EXNSAM(IPATH,1,1)=EXNSAM(IPATH,1,1)+C(1,1,1)*TT(1)/WS
    90.          00             GO TO 80
    91.          00      C
    92.          00      C      SEGMENT IS A STREET CANYOH
    93.          00       70    CALL STREET(IPATH,LINK,TT)
    94.          00       80    CONTINUE
    95.          00      C
    96.          00      C      COMPUTE DISPERSION OF NON-PATHWAY SOURCE EMISSIONS
    97.          00      C
    98.          00       100   CALL NPATHD
    99.          00             RETURN
   100.          00             END

END ELT.  ERRORS: NONE. TIME:  0.303 SEC. IMAGE COUNT: 100

@HDG,P  ******  EFALTX  ******
```

```
      1.          00          SUBROUTINE INDATA
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE READS AND EDITS THE INPUT DATA NEEDED BY THE MAIN
      5.          00      C     MODEL
      6.          00      C
      7.          00      C
      8.          00           COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
      9.          00          1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     10.          00           COMMON/IO/IREAD,IWRI,IFILE
     11.          02           COMMON/GENRL/AMHEAD(10),IDATE(3),CONVRT
     12.          00           COMMON/RUNTYP/MODRUN
     13.          00           COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     14.          00           COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     15.          00           COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     16.          00           COMMON/PAEMIS/ERATEA(5,20,3),ERATEP(5,20,3),W(5,20)
     17.          00           COMMON/GRID/XG(500),YG(500),GVMT(500),IGLOC(500),GEMIS(500),
     18.          00          1GSIZE(500)
     19.          00           COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     20.          00           COMMON/METST/WS,IWD,ISTAB
     21.          00           COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     22.          00          1JOPT3
     23.          00           COMMON/EMSFAC/OUTFAC(2,11,3),GRDFAC(2,5,3),EMCR1(2,3,6),
     24.          00          1EMAD1(2,3,6),EMIDLE(3)
     25.          00           COMMON/TRAFFM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
     26.          00          1QDIST(5,20,2),CYCL(5,20,2),FEL(5,20,2),P(5,20,2)
     27.          00           COMMON/TRAFOT/VOLHR(5,20,4),LINSPD(5,20,4)
     28.          00           COMMON/SPREAD/DIURN(3,2,2),SEASON(3,12)
     29.          00           COMMON/TOLL/TOLLS(5,20,2)
     30.          00           COMMON/BAKUP/VOLBAK(5,20,2),CAPBAK(5,20,2),
     31.          00          1BAKTIM(5,20,2)
     32.          00           COMMON/SIGNAL/R(4),GPH(5,20,4),
     33.          00          1ACAP(5,20,4),ADV(5,20,4)
     34.          00           COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     35.          00           COMMON/NOCOMM/NCOMM(5,2)
     36.          00           DIMENSION AMPM(2),N4M(5,20)
     37.          00           DATA IREAD,IWRI,IFILE/5,6,8/,AMPM/2HAM,2HPM/
     38.          00           ISTOP=0
     39.          00      C
     40.          00      C
     41.          00      C     READ AND EDIT CARD TYPE 1
     42.          00      C
     43.          00      C
     44.          04           READ(IREAD,100) (AMHEAD(I),I=1,10),(IDATE(I),I=1,3),MODRUN,
     45.          00          1LPATH,LNPATH,NPRINT
     46.          04      CR NPOP DELETED BEFORE MODRUN
     47.          04       100  FORMAT(3X,10A2,3I2,4(1X,I1))
     48.          00           IF(IDATE(1).LT.77.OR.IDATE(1).GT.95) GO TO 108
     49.          00           IF(MODRUN.NE.1.AND.MODRUN.NE.2)  GO TO 108
     50.          00           IF(LPATH.NE.1.AND.LPATH.NE.2) GO TO 108
     51.          00           IF(LNPATH.NE.1.AND.LNPATH.NE.2) GO TO 108
     52.          00           IF(NPRINT.NE.1.AND.NPRINT.NE.2) GO TO 108
     53.          00           GO TO 110
     54.          00       108 WRITE(IWRI,109)
     55.          00       109 FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 1M)
     56.          00           ISTOP=1
     57.          00           WRITE(IWRI,107)
     58.          00       107 FORMAT(5X,47HPROCESSING WILL CONTINUE THROUGH LAST CARD TYPE)
     59.          00      C
     60.          00      C
     61.          00      C     READ AND EDIT CARD TYPE 2
     62.          00      C
     63.          00      C
     64.          00       110 READ(IREAD,111) NPATHS,(NSEG(I),I=1,5),NGRID,CONVRT
```

```
*** D05 ***                                                                                                    *** D05 ***
     65.          00              IF(DEL.GT.0.AND.ISTRIN.EQ.5)PCRED=PCIM(DEL,ISTRIN,ITECH+(IPROGM-
     66.          00             *1)*4+(IPOL-1)*8)*0.01
     67.          00
     68.          00         C*PERHAPS SKIP FOR LDT?                                                        00118400
     69.          00              PCLEFT = 1. - PCRED                                                       00118500
     70.          00         C                                                                              00118600
     71.          00              BEF(I,CYP,IPOL+(IMODE-1)*3)=BEF(I,CYP,IPOL+(IMODE-1)*3)*PCLEFT
     72.          00         80   CONTINUE
     73.          00         90   CONTINUE                                                                  00118900
     74.          00         C                                                                              00119000
     75.          00         100  CONTINUE                                                                  00119100
     76.          00         C                                                                              00119200
     77.          00              RETURN                                                                    00119300
     78.          00         C                                                                              00119400
     79.          00         C    DEBUG SUBCHK                                                              00119500
     80.          00         C                                                                              00119600
     81.          00              END                                                                       00119700
END ELT.  ERRORS: NONE. TIME:  0.345 SEC. IMAGE COUNT: 81

@HDG,P  ******  MAPCEMAP  ******
```

```
      00              IF(YTEMP2.LT.YGTEMP.OR.YTEMP2.GT.YGPLUS) GO TO 62                                  *** D06 ***
      00              JGRID2(IPATH,LINK)=IG
      00        62    IF(JGRIDM(IPATH,LINK).NE.0) GO TO 63
      00              IF(XMID.LT.XGTEMP.OR.XMID.GT.XGPLUS) GO TO 70
      00              IF(YMID.LT.YGTEMP.OR.YMID.GT.YGPLUS) GO TO 70
      00              JGRIDM(IPATH,LINK)=IG
      00        63    IF(JGRID1(IPATH,LINK).NE.0.AND.JGRID2(IPATH,LINK).NE.0) GO TO 80
      00        70    CONTINUE
      00              WRITE(IWRI,72) LINK,IPATH
      00        72    FORMAT(2X,35HA GRID SQUARE THROUGH WHICH SEGMENT,I4,11H OF PATHWAY
      00             1,I4,18H PASSES IS MISSING)
      00              STOP
      00        80    CONTINUE
      00       100    CONTINUE
      00     C
      00     C
      00     C       COMPUTE NORMALIZED EXPOSURES FROM NON-PATHWAY SOURCES
      00     C
      00     C
      00              IF(MODRUN.EQ.2) GO TO 120
      00     C
      00     C       ANNUAL MODE
      00     C
      00              DO 112 IPATH=1,NPATHS
      00              NSEGS=NSEG(IPATH)
      00              DO 111 LINK=1,NSEGS
      00              IDUM1=JGRID1(IPATH,LINK)
      00              IDUM2=JGRID2(IPATH,LINK)
      00              IDUMM=JGRIDM(IPATH,LINK)
      00              DO 111 IS=1,5
      00              DO 110 IP=2,2
      00     C        COMPUTE AM AND PM NORMALIZED CONCENTRATIONS AT END POINTS AND
      00     C        MIDPOINT OF SEGMENT
      00              CHI1A=CONST(IS)*EGRID(IDUM1,IP,1)
      00              CHI2A=CONST(IS)*EGRID(IDUM2,IP,1)
      00              CHIMA=CONST(IS)*EGRID(IDUMM,IP,1)
      00              CHI1P=CONST(IS)*EGRID(IDUM1,IP,2)
      00              CHI2P=CONST(IS)*EGRID(IDUM2,IP,2)
      00              CHIMP=CONST(IS)*EGRID(IDUMM,IP,2)
      00     C        COMPUTE AM AND PM NORMALIZED EXPOSURES ON SEGMENT AND ADD TO
      00     C        PATHWAY SUM
      00     C        UNITS OF EXPOSURE EXNPAM ARE G/M**2
      00              EXNPAM(IPATH,IS,IP)=EXNPAM(IPATH,IS,IP)+0.5*(CHI1A*TT1(IPATH,LINK,
      00             1)+CHIMA*(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1))+CHI2A*TT2(IPATH,
      00             2LINK,1))*60.
      00              EXNPPM(IPATH,IS,IP)=EXNPPM(IPATH,IS,IP)+0.5*(CHI1P*TT1(IPATH,LINK,
      00             1,2)+CHIMP*(TT1(IPATH,LINK,2)+TT2(IPATH,LINK,2))+CHI2P*TT2(IPATH,
      00             2LINK,2))*60.
      00              CONTINUE
      00              CONTINUE
      00              GO TO 150
      00     C
      00     C       SHORT-TERM MODE
      00     C
      00              DO 145 IPATH=1,NPATHS
      00              NSEGS=NSEG(IPATH)
      00              DO 140 LINK=1,NSEGS
      00              IDUM1=JGRID1(IPATH,LINK)
      00              IDUM2=JGRID2(IPATH,LINK)
      00              IDUMM=JGRIDM(IPATH,LINK)
      00              DO 130 IP=2,2
      00     C          COMPUTE CONCENTRATION AT END POINTS AND MIDPOINT OF SEGMENT
      00              CHI1=CONST(ISTAB)*EGRID(IDUM1,IP,1)/WS
      00              CHI2=CONST(ISTAB)*EGRID(IDUM2,IP,1)/WS
      00              CHIM=CONST(ISTAB)*EGRID(IDUMM,IP,1)/WS
      00     C        COMPUTE EXPOSURE ON SEGMENT AND ADD TO PATHWAY SUM
```

```
@ELT,L CEM.ROAD
ELT 8R1 S7491C 04/23/82 15:45:20 (0)                                                                                *** D07 ***
      1.          00                SUBROUTINE ROAD (KTIME,KWD,KSTAB1,KSTAB2,JWS,IPATH,LINK,C)
      2.          00        C
      3.          00        C
      4.          00        C       THIS SUBROUTINE USES THE CALINE3 METHODOLOGY TO COMPUTE SEMI-
      5.          00        C       NORMALIZED CONCENTRATIONS ON PATHWAY SEGMENTS THAT ARE NOT STREET
      6.          00        C       CANYONS
      7.          00        C
      8.          00        C
      9.          00                COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     10.          00               1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     11.          00                COMMON/GENR./MHEAD(10),IDATE(3),CONVRT
     12.          00                COMMON/IO/IREAD,IWRI,IFILE
     13.          00                COMMON/PAEMIS/ERATEA(5,20,3),ERATEP(5,20,3),W(5,20)
     14.          00                COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     15.          00                COMMON/RUNTYP/MODRUN
     16.          00                COMMON/METST/WS,IWD,ISTAB
     17.          00                COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     18.          00                REAL LB,NE,INC,LIM,LL,INT6(6)
     19.          00                DIMENSION Y(6),                WDIR(16),QE(2,3),FAC2(2,3),CON(2,3),
     20.          00               1C(2,80,3),AZ(5),AY1(5),AY2(5),WT(5)
     21.          00                DATA WDIR/22.5,45.,67.5,90.,112.5,135.,157.5,180.,202.5,225.,
     22.          00               1247.5,270.,292.5,315.,337.5,0./
     23.          00                DATA AZ/1112.,556.,351.,219.,124./
     24.          00                DATA AY1/0.46,0.29,0.18,0.11,0.087/
     25.          00                DATA AY2/1831.,1155.,717.,438.,346./
     26.          00                DATA WT/0.25,0.75,1.0,0.75,0.25/
     27.          00                DREF=ALOG(10000.)
     28.          00                PI=3.1415926
     29.          00                RAD=PI/180.
     30.          00                DEG=180./PI
     31.          00                IF(LINTYP(IPATH,LINK).EQ.2) Z0=321.
     32.          00                IF(LINTYP(IPATH,LINK).NE.2) Z0=195.
     33.          00                WL=W(IPATH,LINK)+6.
     34.          00                WL2=WL/2.
     35.          00                XD=(X2(IPATH,LINK)-X1(IPATH,LINK))*1609.3*CONVRT
     36.          00                YD=(Y2(IPATH,LINK)-Y1(IPATH,LINK))*1609.3*CONVRT
     37.          00        C       THIS IS LINK LENGTH
     38.          00                LL=SQRT(XD**2+YD**2)
     39.          00                IF(LL.GT.WL) GO TO 10
     40.          00                WRITE(IWRI,6)
     41.          00         6      FORMAT(1H1,1X,49HSEGMENT LENGTH MUST EQUAL OR EXCEED SEGMENT WIDTH
     42.          00               1)
     43.          00                STOP
     44.          00        C       THIS IS LINK BEARING
     45.          00          10    ARG=ABS(XD)/LL
     46.          00                LB=DEG*(ACOS(ARG))
     47.          00                IF(XD.GT.0.0.AND.YD.GE.0.) LB=90.-LB
     48.          00                IF(XD.GE.0.0.AND.YD.LT.0.) LB=90.+LB
     49.          00                IF(XD.LT.0.0.AND.YD.LE.0.) LB=270.-LB
     50.          00                IF(XD.LE.0.0.AND.YD.GT.0.) LB=270.+LB
     51.          00        C
     52.          00        C       THESE ARE UPWIND AND DOWNWIND LENGTHS
     53.          00                UWL=LL/2.
     54.          00                DWL=-LL/2.
     55.          00        C       DETERMINES DIRECTION ALONG LINK (+ IS UPWIND   - IS DOWNWIND)
     56.          00                SGN=1.
     57.          00        C       ELEMENT NO., STEP FACTOR AND LOOP END INITIALIZATION
     58.          00                NE=0.
     59.          00                STP=1.
     60.          00                FINI=1.
     61.          00                IF(SGN.EQ.1.0.AND.UWL.LE.0.0.AND.DWL.LT.0.) SGN=-1.
     62.          00        C
     63.          00        C
     64.          00        C       BEGIN WIND DIRECTION LOOP
```

```
*** D08 ***
      01            IDUM=DUM+1.
      01            EINTVL(IP)=IDUM*10.**(II-1)
      01            GO TO 35
      01         21 EINTVL(IP)=10.
      01            GO TO 35
      01         22 CONTINUE
      01         25 IF(GREXP(IP).EQ.1.0) GO TO 26
      01            IF(GREXP(IP).EQ.10.0) GO TO 27
      01            IDUM=GREXP(IP)+1.
      01            EINTVL(IP)=IDUM/10.
      01            GO TO 35
      01         26 EINTVL(IP)=0.1
      01            GO TO 35
      01         27 EINTVL(IP)=1.0
      01            GO TO 35
      01         30 DUM=GREXP(IP)
      01            DO 34 II=1,10
      01            DUM=DUM*10.
      01            IF(DUM.LT.1.0) GO TO 34
      01            IDUM=DUM+1.
      01            EINTVL(IP)=IDUM/10.**(II+1)
      01            GO TO 35
      01         34 CONTINUE
      01         35 CONTINUE
      01         C
      01         C     COMBINE DAY AND NIGHT NEUTRAL STABILITIES (TO FORM 5 CLASSES) IN
      01         C     MET FREQUENCY DISTRIBUTIONS
      01            DO 50 JWD=1,16
      01            DO 50 JWS=1,6
      01            FREQA(4,JWD,JWS)=FREQA(4,JWD,JWS)+FREQA(5,JWD,JWS)
      01            FREQA(5,JWD,JWS)=FREQA(6,JWD,JWS)
      01            FREQP(4,JWD,JWS)=FREQP(4,JWD,JWS)+FREQP(5,JWD,JWS)
      01            FREQP(5,JWD,JWS)=FREQP(6,JWD,JWS)
      01         50 CONTINUE
      01         C
      01         C     CALCULATE EXPOSURES FOR ALL CASES AND WEIGHT ACCORDING TO FREQUEN-
      01         C     CY DISTRIBUTIONS
      01         C
      01            DO 135 IPATH=1,NPATHS
      01            IF(IPATH.NE.NOPT3) GO TO 51
      01         C
      01         C     DECODE MET CONDITIONS FLAGGED FOR OPTIONAL OUTPUT 3
      01            DO 60 IOPT3=1,JOPT3
      01            IF(NMET(IOPT3).EQ.0) GO TO 60
      01            NWS3(IOPT3)=MOD(NMET(IOPT3),6)
      01            IF(NWS3(IOPT3).EQ.0) NWS3(IOPT3)=6
      01            MM=MOD(NMET(IOPT3),96)
      01            IF(MM.EQ.0) MM=96
      01            NWD3(IOPT3)=(MM+5)/6
      01            NSTAB3(IOPT3)=(NMET(IOPT3)+95)/96
      01            IF(NSTAB3(IOPT3).GE.5) NSTAB3(IOPT3)=NSTAB3(IOPT3)-1
      01         60 CONTINUE
      01         51 DO 130 IP=2,2
      01            DO 110 ISTWD=1,80
      01            ISTAB=(ISTWD+15)/16
      01            IWDIR=MOD(ISTWD,16)
      01            IF(IWDIR.EQ.0) IWDIR=16
      01            DO 106 IWSPD=1,6
      01            IF(FREQA(ISTAB,IWDIR,IWSPD).NE.0.0) GO TO 55
      01            IF(FREQP(ISTAB,IWDIR,IWSPD).EQ.0.0) GO TO 102
      01         C
      01         C     SUM STREET CANYON, NON-STREET CANYON, AND NON-PATHWAY SOURCE
      01         C     EXPOSURES.  NON-STREET CANYON EXPOSURE ARRAYS MUST BE MODIFIED FOR
      01         C     MORE THAN ONE POLLUTANT.  SEE COMMENTS IN ROAD AND DISPRS.
      01         C
      01         55 IW=IWSPD
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```
@ELT,L CEM.TRAF
ELT BR1 S7401C 04/23/82 15:45:34 (1)
      1.          00          SUBROUTINE TRAF
      2.          00     C    THIS IS THE MAIN CONTROL SUBROUTINE FOR THE TRAFFIC MODULE.
      3.          00     C
      4.          00          COMMON/RUNTYP/MODRUN
      5.          00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
      6.          00         1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
      7.          00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
      8.          00          COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
      9.          00          COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     10.          00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     11.          00          COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
     12.          00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     13.          00          COMMON/SPREAD/ DIURN(3,2,2),SEASON(3,12)
     14.          00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     15.          00          COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTT(5,2)
     16.          00          COMMON/SECOND/IAMPC,IFMPC,IPCWH,RATSEC(5)
     17.          00          COMMON/TOLL/TOLLS(5,20,2)
     18.          00          COMMON/BAKUP/VOLBAK(5,20,2),CAPBAK(5,20,2),
     19.          00         1BAKTIM(5,20,2)
     20.          00          COMMON/SIGNAL/R(4),GPH(5,20,4),
     21.          00         1ALAP(5,20,4),ADV(5,20,4)
     22.          00          KTRIP=4
     23.          01          IF(MODRUN.EQ.2) KTRIP=2
     24.          00     C
     25.          00     C
     26.          00     C
     27.          00     C
     28.          00     C
     29.          00          DO 1000 NPATH=1,NPATHS
     30.          00          NLINK=NSEG(NPATH)
     31.          00          DO 990 NSEGS=1,NLINK
     32.          00          DO 900 M=1,KTRIP
     33.          00          M9=M
     34.          00          IF(M9.GT.2) M9=M9-2
     35.          00          K9=0
     36.          01          GO TO (100,200),MODRUN
     37.          00        100 IF(M.EQ.1.OR.M.EQ.4) K9=1
     38.          00          GO TO 5
     39.          00        200 IF(IBOUND.EQ.M) K9=1
     40.          00          5 N=NPATH
     41.          00          L=NSEGS
     42.          00          IF(LINTYP(N,L)-2) 10,20,30
     43.          00         10 CALL FREE(N,L,M,K9,M9)
     44.          00          GO TO 900
     45.          00         20 CALL ART(N,L,M,K9,M9)
     46.          00          GO TO 900
     47.          00         30 CALL MODE(N,L,M,K9,M9)
     48.          00        900 CONTINUE
     49.          00        990 CONTINUE
     50.          00       1000 CONTINUE
     51.          00          RETURN
     52.          00          END

END ELT.  ERRORS: NONE. TIME:  0.272 SEC. IMAGE COUNT: 52

@HDG,P  ******  TRKOPC  ******
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@ELT,L CEM.ANNOUT                                                                                    *** E01 ***
ELT 8R1 S7491C 04/23/82 15:44:38 (3)
      1.          00      SUBROUTINE ANNOUT
      2.          00     C
      3.          00     C
      4.          00     C     THIS SUBROUTINE PRINTS THE MODEL OUTPUT STATISTICS FOR THE ANNUAL
      5.          00     C     MODE OF OPERATION
      6.          00     C
      7.          00     C
      8.          00           COMMON/IO/IREAD,IWRI,IFILE
      9.          00           COMMON/DEFINE/LPATH,NPATHS,NSEG(5),NGRID
     10.          00           COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
                              1JOPT3
     11.          00           COMMON/OPOUT/COM01A(10,3,5),COM01P(10,3,5),CMN02A(10,3,5),
     12.          00          1CMN02P(10,3,5),EXP3(10,3,2)
     13.          00           COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     14.          00           COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     15.          00          1EXPSUM(3,2),AVCONC(3,2)
     16.          00           COMMON/PART/EXPP(5,3,2),EXPNP(5,3,2)
     17.          00     C
     18.          00     C     PRINT HEADING
     19.          00           WRITE(IWRI,1)
     20.          00      1    FORMAT(1H1,27X,43HANNUAL AVERAGE COMMUTER EXPOSURE STATISTICS,////
                              1//)
     21.          00     C
     22.          00     C     PRINT PATHWAY EXPOSURE LIST HEADING
     23.          00           WRITE(IWRI,2)
     24.          00      2    FORMAT(10X,13HEXPOSURE FROM, 12X,13HEXPOSURE FROM,/,15X,
                             15HPATHWAY SOURCES,8X,19HNON-PATHWAY SOURCES,9X,
                             214HTOTAL EXPOSURE,31X,13HCONCENTRATION,/,15X,
                             316H(GRAM SEC/CU. M),9X,16H(GRAM SEC/CU. M),9X,
                             416H(GRAM SEC/CU. M),6X,17HTRAVEL TIME (SEC),7X,
                             513H(GRAMS/CU. M),/,2X,7HPATHWAY,3X,10HAM AVERAGE,
                             62X,10HPM AVERAGE,3X,10HAM AVERAGE,2X,10HPM AVERAGE,
                             73X,10HAM AVERAGE,2X,10HPM AVERAGE,6X,2HAM,8X,2HPM,
                             85X,10HAM AVERAGE,2X,10HPM AVERAGE,/)
     25.          00           DO 100 IP=2,2
     26.          00           DO 10 IPATH=1,NPATHS
     27.          00      10   WRITE(IWRI,11) IPATH,(EXPP(IPATH,IP,IAMPM),IAMPM=1,2),
     28.          00          1(EXPNP(IPATH,IP,IAMPM),IAMPM=1,2),(EXP(IPATH,IP,IAMPM),
     29.          00          2IAMPM=1,2),(TOTT(IPATH,
     30.          00          3IAMPM),IAMPM=1,2),(AVCONC(IP,IPATH,IAMPM),IAMPM=1,2)
     31.          00      11   FORMAT(5X,I2,3X,2(2X,E10.3),1X,2(2X,E10.3),1X,2(2X,E10.3),
     32.          00          12(3X,F7.0),1X,2(2X,E10.3))
     33.          00     C
     34.          00     C     PRINT ANNUAL AVERAGE AM AND PM EXPOSURES OVER ALL PATHWAYS
     35.          00           WRITE(IWRI,15) (EXPSUM(IP,IAMPM),IAMPM=1,2)
     36.          00      15   FORMAT(//////,2X,57HANNUAL AVERAGE EXPOSURE FOR ALL PATHWAYS (GRAM
     37.          00          1 SEC/CU. M),/,2X,2HAM,5X,E10.3,/,2X,2HPM,5X,E10.3)
     38.          00     C
     39.          00     C     PRINT HISTOGRAM DATA HEADING AND DATA
     40.          00           WRITE(IWRI,20)
     41.          00      20   FORMAT(////,36X,12HALL PATHWAYS)
     42.          00           WRITE(IWRI,21)
     43.          00      21   FORMAT(//,38X,17HPERCENT COMMUTERS,5X,27HPROBABILITY OF EXPERIENCI
     44.          00          1NG,/,17X,12HCLASS LIMITS,14X,8HIN CLASS,15X,14HEXPOSURE CLASS,
     45.          00          2/,2X,5HCLASS,8X,16H(GRAM SEC/CU. M),10X,2HAM,7X,2HPM,15X,2HAM,
     46.          00          310X,2HPM,/)
     47.          00           DO 25 IC=1,10
     48.          00           V1=(IC-1)*EINTVL(IP)
     49.          00           V2=V1+EINTVL(IP)
     50.          00      25   WRITE(IWRI,26) IC,V1,V2,(COMSUM(IC,IP,IAMPM),IAMPM=1,2),
     51.          00          1(CMNSUM(IC,IP,IAMPM),IAMPM=1,2)
     52.          00      26   FORMAT(3X,I2,6X,2(1X,E10.3),2X,2(5X,F4.0),5X,2(7X,F5.3))
     53.          00     C
     54.          00     C     PRINT OPTIONAL OUTPUT 1, IF CALLED FOR
```

```
      00          * 16.42, 12.73,  2.02,  1.82,  0.49,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00164700
      00          *  0.16,  0.26,  0.16,  0.25,  0.18,  0.04, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00164800
      00          *  2.93,  1.86,  0.24,  0.08,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00164900
      00          * 17.24, 18.62,  1.82,  0.49,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165000
      00          *  0.18,  0.27,  0.18,  0.04,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165100
      00          *  3.85,  0.71,  3.09,  0.73,  0.20,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165200
      00          * 24.63, 15.70, 21.92, 19.23,  1.54,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165300
      00          *  0.02,  0.04,  0.02,  0.02,  0.01,  0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165400
      00          *  0.50,  0.40,  0.40,  0.25,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165500
      00          *  1.32,  0.66,  0.66,  0.66,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165600
      00          *  1.11,  1.00,  0.99,  0.27,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165700
      00          *  4.05,  2.13,  1.72,  0.32,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165800
      00          *  8.27,  4.87,  3.57,  0.65,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00165900
      00          *  0.01,  0.02,  0.04,  0.01,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00166000
      00    C                                                                               00166100
      00    C***IDLE EMISSION FACTOR INTERCEPT: CALIFORNIA                                  00166200
      00        DATA IDLBCA/                                                                00166300
      00          *  2.01,  0.93,  0.04,  0.02,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00166400
      00          * 16.42, 15.02,  0.18,  0.18,  0.14,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00166500
      00          *  0.16,  0.24,  0.07,  0.11,  0.08,  0.02, 0.02, 0.0 , 0.0 , 0.0 , 0.0 ,00166600
      00          *  2.01,  0.68,  0.28,  0.07,  0.04,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00166700
      00          * 16.42, 12.73,  2.02,  1.72,  0.48,  0.48, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00166800
      00          *  0.16,  0.26,  0.16,  0.25,  0.21,  0.09, 0.04, 0.0 , 0.0 , 0.0 , 0.0 ,00166900
      00          *  2.93,  1.86,  0.07,  0.04,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167000
      00          * 17.24, 18.62,  1.72,  0.48,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167100
      00          *  0.18,  0.27,  0.25,  0.09,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167200
      00          *  3.85,  0.71,  3.09,  0.18,  0.05,  0.03, 0.01, 0.0 , 0.0 , 0.0 , 0.0 ,00167300
      00          * 24.63, 15.70, 21.92,  4.40,  4.04,  0.32, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167400
      00          *  0.02,  0.04,  0.02,  0.05,  0.05,  0.04, 0.03, 0.0 , 0.0 , 0.0 , 0.0 ,00167500
      00          *  0.50,  0.40,  0.40,  0.25,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167600
      00          *  1.32,  0.66,  0.66,  0.66,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167700
      00          *  1.11,  1.00,  0.93,  0.81,  0.27,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167800
      00          *  3.46,  1.81,  1.48,  0.32,  0.11,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00167900
      00          * 11.57,  6.85,  5.00,  0.91,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00168000
      00          *  0.01,  0.02,  0.04,  0.01,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00168100
      00    C                                                                               00168200
      00    C***IDLE EMISSION FACTOR INTERCEPT: HIGH ALTITUDE                               00168300
      00        DATA IDLBHI/                                                                00168400
      00          *  2.29,  1.04,  0.24,  0.17,  0.24,  0.05, 0.05, 0.03, 0.0 , 0.0 , 0.0 ,00168500
      00          * 20.70, 20.71,  4.48,  3.01,  4.48,  1.81, 0.84, 0.41, 0.0 , 0.0 , 0.0 ,00168600
      00          *  0.26,  0.19,  0.08,  0.06,  0.28,  0.06, 0.14, 0.04, 0.0 , 0.0 , 0.0 ,00168700
      00          *  2.29,  1.04,  0.22,  0.28,  0.52,  0.39, 0.12, 0.08, 0.0 , 0.0 , 0.0 ,00168800
      00          * 20.70, 20.71,  5.60,  2.02,  5.60,  3.75, 1.01, 0.49, 0.0 , 0.0 , 0.0 ,00168900
      00          *  0.26,  0.19,  0.08,  0.04,  0.25,  0.04, 0.11, 0.18, 0.04, 0.0 , 0.0 ,00169000
      00          *  3.40,  3.50,  0.39,  0.12,  0.08,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169100
      00          * 38.84, 48.25,  3.75,  1.01,  0.49,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169200
      00          *  0.10,  0.17,  0.11,  0.18,  0.04,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169300
      00          *  4.46,  1.34,  5.82,  1.22,  0.32,  0.20, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169400
      00          * 55.59, 40.68, 56.80, 31.15,  3.17,  1.54, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169500
      00          *  0.01,  0.02,  0.02,  0.01,  0.01,  0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169600
      00          *  0.58,  0.75,  0.75,  0.34,  0.25,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169700
      00          *  2.97,  1.71,  1.71,  1.71,  0.66,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169800
      00          *  0.64,  0.64,  0.64,  0.27,  0.0 ,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00169900
      00          *  4.01,  3.59,  2.87,  0.60,  0.13,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00170000
      00          * 26.07,  6.68,  4.90,  1.34,  0.65,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00170100
      00          *  0.01,  0.01,  0.03,  0.01,  0.04,  0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,00170200
      00    C                                                                               00170300
      00    C***IDLE EMISSION FACTOR SLOPE: 49 STATE                                        00170400
      00        DATA IDEL49/                                                                00170500
      00          * 0.18, 0.20, 0.07, 0.07, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00170600
      00          * 2.55, 2.92, 0.83, 0.67, 0.59, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00170700
      00          * 0.0 , 0.0 , 0.0 , 0.03, 0.06, 0.08, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00170800
      00          * 0.18, 0.20, 0.19, 0.19, 0.09, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00170900
      00          * 2.55, 2.92, 1.56, 1.56, 0.25, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171000
      00          * 0.0 , 0.0 , 0.0 , 0.02, 0.01, 0.02, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171100
      00          * 0.18, 0.20, 0.19, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171200
```

*** E02 ***

```
*** E03 ***                                                                                                    *** E03 ***
@ELT,L CEM.EFALTX
ELT 8R1 S74Q1C 04/23/82 15:44:52 (0)
      1.          00              SUBROUTINE EFALTX
      2.          00      C
      3.          00              COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC
      4.          00              COMMON/INDXCM/INDX3R(30,3,18)
      5.          00              COMMON/BASECM/BASE3R(10,3,18)
      6.          00              COMMON/DELCOM/DEL3R(10,3,18)
      7.          00      C
      8.          00              INTEGER MAXIND(3,6,3)
      9.          00      C
     10.          00              DO 10 IR=1,3
     11.          00              DO 10 IM=1,6
     12.          00              DO 10 IP=1,3
     13.          00      10      MAXIND(IP,IM,IR)=INDX3R(30,IP,IM+(IR-1)*6)
     14.          00      C
     15.          00              DO 20 IMOD=1,100
     16.          00      20      MODFLG(IMOD)=0
     17.          00      C
     18.          00              DO 100 IFAC=1,NEWFAC
     19.          00              IREG=INTALT(1,IFAC)
     20.          00              IMOD=INTALT(2,IFAC)
     21.          00              IPOL=INTALT(3,IFAC)
     22.          00              MYFRST=INTALT(4,IFAC)
     23.          00              MYLAST=INTALT(5,IFAC)
     24.          00              MAXOLD=MAXIND(IPOL,IMOD,IREG)
     25.          00              IF(MAXOLD.GE.10) GO TO 100
     26.          00              NEWMAX=MAXOLD+1
     27.          00              MAXIND(IPOL,IMOD,IREG)=NEWMAX
     28.          00      C
     29.          00              DO 50 IMY=MYFRST,MYLAST
     30.          00              MY=IMY-65
     31.          00              INDX3R(MY,IPOL,IMOD+(IREG-1)*6)=NEWMAX
     32.          00       50       CONTINUE
     33.          00      C
     34.          00              BASE3R(NEWMAX,IPOL,IMOD+(IREG-1)*6)=R4ALT(1,IFAC)
     35.          00              DEL3R(NEWMAX,IPOL,IMOD+(IREG-1)*6)=R4ALT(2,IFAC)
     36.          00      C
     37.          00              MODFLG(IFAC)=1
     38.          00      100     CONTINUE
     39.          00              RETURN
     40.          00              END

END ELT.  ERRORS: NONE. TIME:  0.221 SEC. IMAGE COUNT: 40

@HDG,P  ******  EFCALX  ******
```

*** E04 ***

```
00       111  FORMAT(3X,6I2,I3,F10.0)
00            IF(NPATHS.LT.1.OR.NPATHS.GT.25) GO TO 115
00            DO 112 I=1,NPATHS
00            IF(NSEG(I).LT.1.OR.NSEG(I).GT.20) GO TO 115
00       112  CONTINUE
00            IF(NGRID.LT.1.OR.NGRID.GT.500) GO TO 115
00            IF(CONVRT.LE.0.) GO TO 115
00            GO TO 120
00       115  WRITE(IWRI,119)
00       119  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 2M)
00            ISTOP=1
00            WRITE(IWRI,107)
00     C
00     C
00     C      READ AND EDIT CARD TYPE 3
00     C
00     C
00       120  NINT=0
00            DO 123 IP=1,NPATHS
00            NSEGS=NSEG(IP)
00            DO 122 IS=1,NSEGS
00            N4M(IP,IS)=0
00            IF(MODRUN.EQ.2) GO TO 126
00     C
00     C      ANNUAL MODE
00            READ(IREAD,121) NPATH,LINK,LINTOP(IP,IS),LINTYP(IP,IS),
00           1(VOLHR(IP,IS,M),M=1,4),IVFORM(IP,IS),IVSPRD(IP,IS),
00           2LINCAP(IP,IS),(NLANE(IP,IS,M),M=1,2),LANWID(IP,IS),
00           3(LINSPD(IP,IS,M),M=1,4),X1(IP,IS),Y1(IP,IS),X2(IP,IS),
00           4Y2(IP,IS),INTYPE(IP,IS),INTDAT(IP,IS)
00       121  FORMAT(3X,2I2,2I1,4F6.0,2I2,I5,2I1,5I2,4F6.0,2I1)
00            GO TO 127
00     C
00     C      SHORT-TERM MODE
00       126  READ(IREAD,1121) NPATH,LINK,LINTOP(IP,IS),LINTYP(IP,IS),
00           1(VOLHR(IP,IS,M),M=1,2),IBOUND,IVFORM(IP,IS),IVSPRD(IP,IS),
00           2LINCAP(IP,IS),(NLANE(IP,IS,M),M=1,2),LANWID(IP,IS),
00           3(LINSPD(IP,IS,M),M=1,2),X1(IP,IS),Y1(IP,IS),X2(IP,IS),
00           4Y2(IP,IS),INTYPE(IP,IS),INTDAT(IP,IS)
00      1121  FORMAT(3X,2I2,2I1,2F6.0,1X,I1,10X,2I2,I5,2I1,3I2,4X,4F6.0,2I1)
00       127  IF(NPATH.NE.IP) GO TO 128
00            IF(LINK.NE.IS) GO TO 128
00            IF(LINTYP(IP,IS).LT.1.OR.LINTYP(IP,IS).GT.3) GO TO 128
00            IF(X1(IP,IS).LE.0.0.OR.Y1(IP,IS).LE.0.) GO TO 128
00            IF(X2(IP,IS).LE.0.0.OR.Y2(IP,IS).LE.0.) GO TO 128
00            IF(LPATH.NE.2) GO TO 125
00            DO 124 IPOL=2,2
00            ERATEA(IP,IS,IPOL)=VOLHR(IP,IS,1)+VOLHR(IP,IS,2)
00            IF(MODRUN.EQ.2) GO TO 124
00            ERATEP(IP,IS,IPOL)=VOLHR(IP,IS,3)+VOLHR(IP,IS,4)
00       124  CONTINUE
00            GO TO 122
00       125  IF(IVFORM(IP,IS).NE.-1.AND.IVFORM(IP,IS).NE.1) GO TO 128
00            IF(IVSPRD(IP,IS).LT.-1.OR.IVSPRD(IP,IS).GT.1) GO TO 128
00            IF(INTYPE(IP,IS).LT.0.OR.INTYPE(IP,IS).GT.3) GO TO 128
00            IF(INTYPE(IP,IS).NE.0) NINT=NINT+1
00            GO TO 122
00       128  WRITE(IWRI,129)
00       129  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 3M)
00            ISTOP=1
00            WRITE(IWRI,107)
00       122  CONTINUE
00       123  CONTINUE
00     C
00     C
00     C      READ CARD TYPE 4
```

```
*** E05 ***
@ELT,L  CEM.MAPCEMAP                                                    *** E05 ***
ELT 04: s7401C 04/23/82 15:45:05 (2)
      1.          01      @MAP  CEM.CEMAP
      2.          00       IN CEM.CEMAP
      3.          02       IN CEM.COMOUT
      4.          00       IN CEM.INDATA
      5.          00       IN CEM.TRAF
      6.          00       IN CEM.FREE
      7.          00       IN CEM.GRAF
      8.          00       IN CEM.ART
      9.          00       IN CEM.MODE
     10.          00       IN CEM.EMISS
     11.          00       IN CEM.NPATHE
     12.          00       IN CEM.DISPRS
     13.          00       IN CEM.STREET
     14.          00       IN CEM.ROAD
     15.          00       IN CEM.NPATHD
     16.          00       IN CEM.SHORTY
     17.          00       IN CEM.STATIS
     18.          00       IN CEM.ANNOUT
     19.          00       IN CEM.BLKDAT1
     20.          00      LIB FTN=RLIB.
     21.          00      END

END ELT.  ERRORS: NONE. TIME:  0.210 SEC. IMAGE COUNT: 21

@HDG,P  ******  MAPPREPRS  ******
```

```
*** E06 ***                                                                                                    *** E06 ***
   131.          00      C     UNITS OF EXPOSURE EXNPAM ARE G-SEC/M**3
   132.          00            EXNPAM(IPATH,1,IP)=EXNPAM(IPATH,1,IP)+0.5*(CHI1*TT1(IPATH,LINK,1)+
   133.          00           1CHIM*(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1))+CHI2*TT2(IPATH,LINK,1))
   134.          00           2*60.
   135.          00            IF(LINK.NE.NSEGS) GO TO 130
   136.          00            CNPLST(IPATH,IP)=0.5*(((CHI1*TT1(IPATH,LINK,1)+CHI2*TT2(IPATH,LINK
   137.          00           1,1))/(TT1(IPATH,LINK,1)+TT2(IPATH,LINK,1)))+CHIM)
   138.          00       130 CONTINUE
   139.          00       140 CONTINUE
   140.          00       145 CONTINUE
   141.          00       150 CONTINUE
   142.          00           RETURN
   143.          00           END

END ELT.  ERRORS: NONE. TIME:  0.379 SEC. IMAGE COUNT: 143

@HDG,P  ******  NPATHE  ******
```

```
      65.          00      C
      66.          00      C
      67.          00              DO 970 JWD=1,KWD
      68.          00      C       CONVERT WIND DIRECTION TO VECTOR ORIENTATION
      69.          00              IF(MODRUN.EQ.1) GO TO 12
      70.          00      C       SHORT-TERM MODE
      71.          00              WD=IWD+180.
      72.          00              GO TO 13
      73.          00      C       ANNUAL MODE
      74.          00       12     WD=WDIR(JWD)+180.
      75.          00       13     IF(WD.GE.360.) WD=WD-360.
      76.          00      C       THIS IS WIND ANGLE WITH RESPECT TO LINK
      77.          00              PHI=ABS(WD-LB)
      78.          00              IF(PHI.LE.90.) GO TO 30
      79.          00              IF(PHI.GE.270.) GO TO 20
      80.          00              PHI=ABS(PHI-180.)
      81.          00              GO TO 30
      82.          00       20     PHI=ABS(PHI-360.)
      83.          00      C
      84.          00      C       SET ELEMENT GROWTH BASE
      85.          00       30     IF(PHI.LT.20.) GO TO 35
      86.          00              IF(PHI.LT.50.) GO TO 34
      87.          00              IF(PHI.LT.70.) GO TO 33
      88.          00              BASE=4.
      89.          00              GO TO 40
      90.          00       33     BASE=2.
      91.          00              GO TO 40
      92.          00       34     BASE=1.5
      93.          00              GO TO 40
      94.          00       35     BASE=1.1
      95.          00       40     PHI=RAD*PHI
      96.          00      C
      97.          00      C       IF PHI IS 90 OR ZERO, OFFSET IT VERY SLIGHTLY
      98.          00              IF(PHI.GT.1.5706) PHI=1.5706
      99.          00              IF(PHI.LT.0.00017) PHI=0.00017
     100.          00      C
     101.          00      C
     102.          00      C       BEGIN STABILITY LOOP
     103.          00      C
     104.          00      C
     105.          00              DO 960 JSTAB=KSTAB1,KSTAB2
     106.          00      C       THIS IS ALOG(SIGMA Y) AT 1 M
     107.          00              SY1=ALOG(AY1(JSTAB)*((Z0/3.)**.2)*1.820564)
     108.          00      C       THIS IS ALOG (SIGMA Y) AT 10 KM
     109.          00              SY10=ALOG(AY2(JSTAB)*((Z0/3.)**.07)*1.820564)
     110.          00              PY1=EXP(SY1)
     111.          00              PY2=(SY10-SY1)/DREF
     112.          00      C       THIS IS ALOG (SIGMA Z) AT 10 KM
     113.          00              SZ10=ALOG(AZ(JSTAB)*((Z0/10.)**.07)*1.820564)
     114.          00      C
     115.          00      C
     116.          00      C       BEGIN WIND SPEED LOOP--ONLY FIRST 3 WIND SPEEDS ARE USED.
     117.          00      C       NORMALIZED CONCENTRATIONS CALCULATED FOR WS CLASS 3 WILL BE USED
     118.          00      C       FOR WS CLASSES 4, 5, AND 6.  NORMALIZED CONCENTRATIONS ARE NOT
     119.          00      C       QUITE NORMALIZED BECAUSE WIND SPEED IS USED IN COMPUTING INITIAL
     120.          00      C       SIGMA Z.  HOWEVER, VARIATION IN INITIAL SIGMA Z BETWEEN WIND
     121.          00      C       SPEED CLASSES 3 AND 6 IS UNDER 10 PERCENT.
     122.          00      C
     123.          00      C
     124.          00              DO 950 IWS=1,JWS
     125.          00      C
     126.          00      C       SIGMA Z POWER CURVE
     127.          00              SGN=1.
     128.          00              IF(MODRUN.EQ.1) GO TO 54
     129.          00              TR=W2/WS
     130.          00              GO TO 55
```

*** E07 ***

```
      01            IF(IW.GT.3) IW=3
      01            AMNEXP=EXNPAM(IPATH,ISTAB,IP)/WSPD(IWSPD)
      01            PMNEXP=EXNPPM(IPATH,ISTAB,IP)/WSPD(IWSPD)
      01            AMPEXP=EXNSAM(IPATH,ISTWD,IW)/WSPD(IWSPD)+
      01           1EXST(IPATH,IP,1)/(0.5+WSPD(IWSPD))
      01            PMPEXP=EXNSPM(IPATH,ISTWD,IW)/WSPD(IWSPD)+
      01           1EXST(IPATH,IP,2)/(0.5+WSPD(IWSPD))
      01            AMEXP=AMPEXP+AMNEXP
      01            PMEXP=PMPEXP+PMNEXP
      01            IF(IPATH.NE.NOPT3) GO TO 80
      01      C
      01      C     IF THIS CASE IS FLAGGED FOR OPTIONAL OUTPUT 3, SAVE EXPOSURE
      01      C     VALUES
      01            DO 70 IOPT3=1,JOPT3
      01            IF(ISTAB.NE.NSTAB3(IOPT3).OR.IWDIR.NE.NWD3(IOPT3)) GO TO 70
      01            IF(IWSPD.EQ.NWS3(IOPT3)) GO TO 72
      01       70   CONTINUE
      01            GO TO 80
      01       72   EXP3(IOPT3,IP,1)=AMEXP
      01            EXP3(IOPT3,IP,2)=PMEXP
      01      C     WEIGHT CASE EXPOSURE BY FREQUENCY OF OCCURRENCE AND ADD TO
      01      C     EXPOSURE SUM
      01       80   EXP(IPATH,IP,1)=EXP(IPATH,IP,1)+AMEXP*FREQA(ISTAB,IWDIR,IWSPD)
      01            EXP(IPATH,IP,2)=EXP(IPATH,IP,2)+PMEXP*FREQP(ISTAB,IWDIR,IWSPD)
      01            EXPP(IPATH,IP,1)=EXPP(IPATH,IP,1)+AMPEXP*FREQA(ISTAB,IWDIR,
      01           1IWSPD)
      01            EXPP(IPATH,IP,2)=EXPP(IPATH,IP,2)+PMPEXP*FREQP(ISTAB,IWDIR,
      01           1IWSPD)
      01            EXPNP(IPATH,IP,1)=EXPNP(IPATH,IP,1)+AMNEXP*FREQA(ISTAB,IWDIR,
      01           1IWSPD)
      01            EXPNP(IPATH,IP,2)=EXPNP(IPATH,IP,2)+PMNEXP*FREQP(ISTAB,IWDIR,
      01           1IWSPD)
      01      C     DETERMINE EXPOSURE CLASS
      01            DO 85 ICA=1,10
      01            IF(AMEXP.LE.ICA*EINTVL(IP)) GO TO 86
      01       85   CONTINUE
      01       86   DO 87 ICP=1,10
      01            IF(PMEXP.LE.ICP*EINTVL(IP)) GO TO 88
      01       87   CONTINUE
      01      C     WEIGHT NO. OF COMMUTERS BY FREQUENCY OF OCCURRENCE AND ADD TO
      01      C     COMMUTER SUM
      01       88   COMSUM(ICA,IP,1)=COMSUM(ICA,IP,1)+NCOMM(IPATH,1)*FREQA(ISTAB,IWDIR
      01           1,IWSPD)
      01            COMSUM(ICP,IP,2)=COMSUM(ICP,IP,2)+NCOMM(IPATH,2)*FREQP(ISTAB,IWDIR
      01           1,IWSPD)
      01      C
      01      C     STORE OPTIONAL OUTPUT1, IF CALLED FOR
      01            IF(JOPT1.EQ.0) GO TO 95
      01            DO 90 KP=1,JOPT1
      01            IF(IPATH.EQ.NOPT1(KP)) GO TO 91
      01       90   CONTINUE
      01            GO TO 95
      01       91   COMO1A(ICA,IP,KP)=COMO1A(ICA,IP,KP)+NCOMM(IPATH,1)*FREQA(ISTAB,
      01           1IWDIR,IWSPD)
      01            COMO1P(ICP,IP,KP)=COMO1P(ICP,IP,KP)+NCOMM(IPATH,2)*FREQP(ISTAB,
      01           1IWDIR,IWSPD)
      01      C     WEIGHT COMMUTE-SECONDS BY FREQUENCY OF OCCURRENCE AND ADD TO
      01      C     COMPUTE-SECONDS SUM
      01       95   CMNSUM(ICA,IP,1)=CMNSUM(ICA,IP,1)+NCOMM(IPATH,1)*TOTTT(IPATH,1)*
      01           1FREQA(ISTAB,IWDIR,IWSPD)
      01            CMNSUM(ICP,IP,2)=CMNSUM(ICP,IP,2)+NCOMM(IPATH,2)*TOTTT(IPATH,2)*
      01           1FREQP(ISTAB,IWDIR,IWSPD)
      01      C
      01      C     STORE OPTIONAL OUTPUT 2, IF CALLED FOR
      01            IF(JOPT2.EQ.0) GO TO 105
      01            DO 100 KP=1,JOPT2
```

*** E08 ***

```
*** E09 ***
@ELT,L CEM.TRKOPC
ELT,R1 S74Q1C 04/23/82 15:45:35 (0)                                                                    *** E09 ***
     1.          00          SUBROUTINE TRKOPC(CY,HGWGT,HDWGT,HGCID,HDCID)                                00121400
     2.          00    C                                                                                  00121500
     3.          00          COMMON/RET2/TRKRET(20,3,2)                                                   00121600
     4.          00          INTEGER CY,INDXAR(45)                                                        00121700
     5.          00    C**IN B0,B1 AND B2, 1ST INDEX IS YEAR GROUP, 2ND IS VEHTYPE,3RD IS POL             00121800
     6.          00          REAL B0(3,2,3),B1(3,2,3),B2(3,2,3)                                           00121900
     7.          00    C                                                                                  00122000
     8.          00          DATA B0/1.302,-.584,-.762,2.058,2.058,.893,                                  00122100
     9.          00         *        .814,.354,.520,-.533,-.533,-.299,                                    00122200
    10.          00         *        .869,.883,.943,.085,.085,.138     /                                  00122300
    11.          00    C                                                                                  00122400
    12.          00          DATA B1/.177,.124,.131,-.005,-.005,.015,                                     00122500
    13.          00         *       -.036,.106,.149,-.03,-.03,.03,                                        00122600
    14.          00         *        .172,.016,.008,.02,.02,.023     /                                    00122700
    15.          00    C                                                                                  00122800
    16.          00          DATA B2/-.065,-.01,-.047,-.014,-.014,-.006,                                  00122900
    17.          00         *        .016,-.024,-.045,.043,.043,.003                                      00123000
    18.          00         *       -.054,-.003,-.012,.002,.002,.001  /                                   00123100
    19.          00    C                                                                                  00123200
    20.          00          DATA INDXAR/19*1,4*2,22*3/                                                   00123300
    21.          00    C                                                                                  00123400
    22.          00          DO 100 IMY=1,20                                                              00123500
    23.          00    C                                                                                  00123600
    24.          00             MY = CY - (20-IMY) - 50                                                   00123700
    25.          00             IX=INDXAR(MY)                                                             00123800
    26.          00    C                                                                                  00123900
    27.          00          DO 100 IPOL = 1,3                                                            00124000
    28.          00    C                                                                                  00124100
    29.          00          TRKRET(IMY,IPOL,1) = B0(IX,1,IPOL) + B1(IX,1,IPOL)*HGWGT*.001 +              00124200
    30.          00         *                     B2(IX,1,IPOL)*HGWGT/HGCID                             00124300
    31.          00    C                                                                                  00124400
    32.          00          TRKRET(IMY,IPOL,2) = B0(IX,2,IPOL) + B1(IX,2,IPOL)*HDWGT*.001 +              00124500
    33.          00         *                     B2(IX,2,IPOL)*HDWGT/HDCID                             00124600
    34.          00    C                                                                                  00124700
    35.          00    100   CONTINUE                                                                     00124800
    36.          00    C                                                                                  00124900
    37.          00          RETURN                                                                       00125000
    38.          00    C     DEBUG SUBCHK                                                                 00125100
    39.          00          END                                                                          00125200

END ELT.  ERRORS: NONE. TIME:  0.276 SEC. IMAGE COUNT: 39

@HDG,N

@BRKPT PRINT$
```

```
*** F01 ***                                                                                                    *** F01 ***
     65.          00              IF(JOPT1.EQ.0) GO TO 40
     66.          00              DO 38 KP=1,JOPT1
     67.          00              WRITE(IWRI,31) NOPT1(KP)
     68.          00           31 FORMAT(///////,33X,8HPATHWAY ,I4)
     69.          00              WRITE(IWRI,21)
     70.          00              DO 35 IC=1,10
     71.          00              V1=(IC-1)*EINTVL(IP)
     72.          00              V2=V1+EINTVL(IP)
     73.          00           35 WRITE(IWRI,36) IC,V1,V2,COMO1A(IC,IP,KP),COMO1P(IC,IP,KP)
     74.          00           36 FORMAT(3X,I2,6X,2(1X,E10.3),2X,2(5X,F4.0))
     75.          00           38 CONTINUE
     76.          00           C
     77.          00           C     PRINT OPTIONAL OUTPUT 2, IF CALLED FOR
     78.          00           40 IF(JOPT2.EQ.0) GO TO 50
     79.          00              DO 48 KP=1,JOPT2
     80.          00              WRITE(IWRI,31) NOPT2(KP)
     81.          00              WRITE(IWRI,21)
     82.          00              DO 45 IC=1,10
     83.          00              V1=(IC-1)*EINTVL(IP)
     84.          00              V2=V1+EINTVL(IP)
     85.          00           45 WRITE(IWRI,46) IC,V1,V2,CMNO2A(IC,IP,KP),CMNO2P(IC,IP,KP)
     86.          00           46 FORMAT(3X,I2,6X,2(1X,E10.3),2X,2(7X,F5.3))
     87.          00           48 CONTINUE
     88.          00           C
     89.          00           C     PRINT OPTIONAL OUTPUT 3, IF CALLED FOR
     90.          00           50 IF(JOPT3.EQ.0) GO TO 100
     91.          00              WRITE(IWRI,51)NOPT3
     92.          00           51 FORMAT(//////,17X,8HPATHWAY ,I4)
     93.          00              WRITE(IWRI,52)
     94.          00           52 FORMAT(//,2X,14HMETEOROLOGICAL,5X,25HEXPOSURE (GRAM SEC/CU. M),/,
                                 14X,10HCONDITIONS,11X,2HAM,13X,2HPM,/)
     96.          00              DO 55 KP=1,JOPT3
     97.          00           55 WRITE(IWRI,56) NMET(KP),(EXP3(KP,IP,IAMPM),IAMPM=1,2)
     98.          00           56 FORMAT(7X,I4,5X,2(5X,E10.3))
     99.          00          100 CONTINUE
    100.          00              RETURN
    101.          00              END

END ELT.  ERRORS: NONE. TIME:  0.304 SEC. IMAGE COUNT: 101

@HDG,P  ******  ART  ******
```

```
*** F02 ***
  329.          00          * 2.55, 2.92, 1.56, 0.25, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171300
  330.          00          * 0.0 , 0.0 , 0.01, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171400
  331.          00          * 0.18, 0.20, 0.20, 0.20, 0.40, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171500
  332.          00          * 2.55, 2.92, 2.92, 2.92, 5.00, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171600
  333.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171700
  334.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171800
  335.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00171900
  336.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00172000
  337.          00          * 0.36, 0.62, 0.62, 0.10, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00172100
  338.          00          * 1.28, 1.12, 1.12, 0.48, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00172200
  339.          00          * 0.0 , 0.0 , 0.0 , 0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 /    00172300
  340.          00    C                                                                        00172400
  341.          00    C***IDLE EMISSION FACTOR SLOPE: CALIFORNIA                               00172500
  342.          00          DATA IDELCA/                                                       00172600
  343.          00          * 0.18, 0.31, 0.01, 0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00172700
  344.          00          * 2.55, 3.15, 0.08, 0.08, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00172800
  345.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00172900
  346.          00          * 0.18, 0.20, 0.19, 0.05, 0.05, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00173000
  347.          00          * 2.55, 2.92, 1.56, 1.56, 0.29, 0.29, 0.0 , 0.0 , 0.0 , 0.0 ,    00173100
  348.          00          * 0.0 , 0.0 , 0.0 , 0.06, 0.04, 0.04, 0.0 , 0.0 , 0.0 , 0.0 ,    00173200
  349.          00          * 0.18, 0.20, 0.05, 0.05, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00173300
  350.          00          * 2.55, 2.92, 1.56, 0.57, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00173400
  351.          00          * 0.0 , 0.0 , 0.02, 0.04, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00173500
  352.          00          * 0.18, 0.20, 0.20, 0.20, 0.20, 0.20, 0.40, 0.0 , 0.0 , 0.0 ,    00173600
  353.          00          * 2.55, 2.92, 2.92, 2.92, 2.92, 5.00, 0.0 , 0.0 , 0.0 , 0.0 ,    00173700
  354.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00173800
  355.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00173900
  356.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00174000
  357.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00174100
  358.          00          * 0.31, 0.28, 0.28, 0.12, 0.12, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00174200
  359.          00          * 1.80, 3.61, 3.61, 1.18, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00174300
  360.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 /    00174400
  361.          00    C                                                                        00174500
  362.          00    C***IDLE EMISSION FACTOR SLOPE: HIGH ALTITUDE                            00174600
  363.          00          DATA IDELHI/                                                       00174700
  364.          00          * 0.21, 0.14, 0.02, 0.07, 0.07, 0.07, 0.07, 0.07, 0.0 , 0.0 ,    00174800
  365.          00          * 0.53, 1.15, 0.98, 0.83, 0.83, 0.67, 0.59, 0.59, 0.0 , 0.0 ,    00174900
  366.          00          * 0.0 , 0.0 , 0.0 , 0.04, 0.06, 0.06, 0.06, 0.08, 0.08, 0.0 ,    00175000
  367.          00          * 0.21, 0.14, 0.08, 0.19, 0.19, 0.19, 0.06, 0.06, 0.0 , 0.0 ,    00175100
  368.          00          * 0.53, 1.15, 1.24, 1.56, 1.56, 1.56, 0.25, 0.25, 0.0 , 0.0 ,    00175200
  369.          00          * 0.0 , 0.0 , 0.0 , 0.03, 0.02, 0.02, 0.01, 0.01, 0.02, 0.0 ,    00175300
  370.          00          * 0.21, 0.14, 0.19, 0.06, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00175400
  371.          00          * 0.53, 1.15, 1.56, 0.25, 0.06, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00175500
  372.          00          * 0.0 , 0.0 , 0.01, 0.01, 0.02, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00175600
  373.          00          * 0.21, 0.14, 0.14, 0.20, 0.40, 0.40, 0.0 , 0.0 , 0.0 , 0.0 ,    00175700
  374.          00          * 0.53, 1.15, 1.15, 2.92, 5.00, 5.00, 0.0 , 0.0 , 0.0 , 0.0 ,    00175800
  375.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00175900
  376.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00176000
  377.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00176100
  378.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00176200
  379.          00          * 0.36, 0.62, 0.62, 0.10, 0.10, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00176300
  380.          00          * 0.66, 1.12, 1.12, 0.48, 0.48, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 ,    00176400
  381.          00          * 0.0 , 0.0 , 0.0 , 0.0 , 0.01, 0.0 , 0.0 , 0.0 , 0.0 , 0.0 /    00176500
  382.          00    C                                                                        00176600
  383.          00    C                                                                        00176700
  384.          00    C                                                                        00176800
  385.          00          DATA DUM1                                                          00176900
  386.          00          *       / 3, 6,11,15,19,24,27,31,35,39,41,42,44,46,47,48,49,51,    00177000
  387.          00          * 52,   4, 8,12,18,22,28,34,36,40,42,45,46,49,50,51,52,54,56,57,   00177100
  388.          00          *       7,13,20,26,32,39,43,46,48,49,52,54,55,57,58,59,60,61,62,63,   00177200
  389.          00          *       8,15,23,30,36,41,46,47,50,52,54,56,58,60,61,62,63,64,65,65,   00177300
  390.          00          *       8,16,25,31,37,42,46,50,53,55,57,59,60,61,62,63,64,65,65,   00177400
  391.          00          *       4, 6,11,16,19,23,25,28,29,31,33,34,35,36,37,38,39,40,41,42,   00177500
  392.          00          *       6,11,16,20,23,27,31,33,36,38,40,41,42,43,44,45,46,47,48,   00177600
  393.          00          *      10,18,24,28,33,36,40,42,45,47,48,50,51,53,54,55,56,57,58,   00177700
  394.          00          *      12,20,26,32,37,40,43,46,48,49,51,52,54,55,56,57,58,60,61,   00177800
```

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*** F03 ***
SELT L CEM.EFCALX
ELT BR1 S7401C 04/23/82 15:44:53 (0)                                                                    *** F03 ***
      1.          00          SUBROUTINE EFCALX(CY,LNKDTA,MS,EFRETM,WTEDEF,CCRETM,IDLRTM,IDLWTD,
      2.          00         1CFRET)
      3.          00    C
      4.          00          COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,                0003800
      5.          00         *             UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                          0003900
      6.          00          COMMON/CEVCOM/CCEV                                                            0004000
      7.          00          COMMON/REGCOM/IREJN                                                           0004100
      8.          00          COMMON/BEFCOM/BEF                                                             0004200
      9.          00          COMMON/IDLCOM/IDLBEF                                                          0004300
     10.          00          COMMON/MYMCOM/MYM,MYR,TF                                                      0004400
     11.          00    C                                                                                   0004500
     12.          00          INTEGER MYP   ,P    CYP                                                       0004600
     13.          00          INTEGER ALHFLG,TRKFLG,ALTFLG,CY SP3FLG,                                       0004700
     14.          00         *        NMHFLG,IDLFLG,UNFFLG,MYMRFG,PRTFLG                                    0004800
     15.          00    C                                                                                   0004900
     16.          00          REAL IDLBEF(20,1,18),IDLFAC(20,3,6),IDLCMP(3,6),IDLWTD(3)                     0005000
     17.          00          REAL IDLRTM(3,6)                                                              0005100
     18.          00          REAL COMPCC(20,6),CCRETM(6)                                                   0005200
     19.          00          REAL CFRET(20,3,6)                                                            0005300
     20.          00          REAL     BEF(20,1,18),      CCEV(65,6),                                       0005400
     21.          00         *         EFRETM(3,6),       COMPEF(20,3,6),                                   0005500
     22.          00         *         COMPMY(3,6),       LNKDTA(7),                                        0005600
     23.          00         *         MYM(20,6),         MYR(20,6),                                        0005700
     24.          00         *         MS(6),             PCCO,                                             0005800
     25.          00         *         PCCC,              PCHS,                                             0005900
     26.          00         *         SPD(3),            TEMP,                                             0006000
     27.          00         *         TF(20,6),          TFNORM(6),                                        0006100
     28.          00         *         WTEDEF(3)                                                            0006200
     29.          00    C                                                                                   0006300
     30.          00    C                                                                                   0006400
     31.          00    C*******************************************************************************  0006500
     32.          00    C                                                                                   0006600
     33.          00          SPD(1)  = LNKDTA(1)                                                           0006700
     34.          00          SPD(2)  = LNKDTA(2)                                                           0006800
     35.          00          SPD(3)  = LNKDTA(3)                                                           0006900
     36.          00          TEMP    = LNKDTA(4)                                                           0007000
     37.          00          PCCO    = LNKDTA(5)                                                           0007100
     38.          00          PCHS    = LNKDTA(6)                                                           0007200
     39.          00          PCCC    = LNKDTA(7)                                                           0007300
     40.          00    C                                                                                   0007400
     41.          00    C                                                                                   0007500
     42.          00               CALL BIGCFX(CY,TEMP,PCCO,PCHS,PCCC,SPD,CFRET)                            0007600
     43.          00    C                                                                                   0007700
     44.          00    C                                                                                   0007800
     45.          00          CYP=1                                                                         0007900
     46.          00    C                                                                                   0008000
     47.          00    C                                                                                   0008100
     48.          00          DO 500 P = 1,3                                                                0008200
     49.          00                   WTEDEF(P) = 0.0                                                      0008300
     50.          00                   IDLWTD(P) = 0.0                                                      0008400
     51.          00             DO 400 M = 1,6                                                            0008500
     52.          00                   COMPMY(P,M) = 0.0                                                    0008600
     53.          00                   IDLCMP(P,M) = 0.0                                                    0008700
     54.          00          IF(P.EQ.1) CCRETM(M)=0.                                                       0008800
     55.          00               DO 300 I = 1,20                                                          0008900
     56.          00    C                                                                                   0009000
     57.          00          MYP = CY -(20-I) - 50                                                         0009100
     58.          00    C                                                                                   0009200
     59.          00                   IF (P.EQ.1)  GO TO 333                                               0009300
     60.          00                   GO TO 444                                                            0009400
     61.          00    C                                                                                   0009500
     62.          00     333   COMPEF(I,P,M)=(BEF(I,CYP,P+(M-1)*3)+CFRET(I,P,M)+CCEV(MYP,M))                0009600
     63.          00          1  *TF(I,M)                                                                   0009700
     64.          00           COMPCC(I,M)=CCEV(MYP,M)*TF(I,M)
```

*** F04 ***

```
00      C
00      C
00            IF(LPATH.EQ.2) GO TO 140
00            IF(NINT.EQ.0) GO TO 140
00            DO 139 INTS=1,NINT
00        139 READ(IREAD,130) N,L,(ADV(N,L,M),M=1,4),(ACAP(N,L,M),
00           1M=1,4),(CYCL(N,L,M),M=1,2),(GPH(N,L,M),M=1,2),
00           2(VOLBAK(N,L,M),M=1,2),(CAPBAK(N,L,M),M=1,2),(BAKTIM(N,L,M),
00           3M=1,2),(TOLLS(N,L,M),M=1,2)
00        130 FORMAT(3X,2I2,8F4.0,4F3.0,4F4.0,4F2.0)
00      C
00      C
00      C     READ AND EDIT CARD TYPE 5
00      C
00      C
00      140   IF(MODRUN.EQ.2) GO TO 1142
00      C       ANNUAL MODE
00            READ(IREAD,1141)(NCOMM(I,1),I=1,NPATHS),(NCOMM(I,2),I=1,NPATHS)
00      1141  FORMAT(3X,15I5)
00            GO TO 1143
00      C
00      C       SHORT TERM MODE
00      1142  READ(IREAD,1141)(NCOMM(I,1),I=1,NPATHS)
00      1143  DO 1145 I=1,NPATHS
00            IF(NCOMM(I,1).LE.0) GO TO 1148
00            IF(MODRUN.EQ.2) GO TO 1145
00            IF(NCOMM(I,2).LE.0) GO TO 1148
00      1145  CONTINUE
00            GO TO 1140
00      1148  WRITE(IWRI,1149)
00      1149  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 5M)
00            ISTOP=1
00            WRITE(IWRI,107)
00      C
00      C
00      C     READ AND EDIT CARD TYPE 6
00      C
00      C
00      1140  IF(MODRUN.EQ.2) GO TO 142
00      C
00      C     ANNUAL MODE
00            READ(IREAD,141) IAMPC,IPMPC,(RATSEC(I),I=1,5)
00       141  FORMAT(3X,2I3,5F5.0)
00            IF(IAMPC.LT.0.OR.IAMPC.GT.100) GO TO 147
00            IF(IPMPC.LT.0.OR.IPMPC.GT.100) GO TO 147
00            GO TO 145
00      C
00      C     SHORT-TERM MODE
00       142  READ(IREAD,143) IPCWH,(RATSEC(I),I=1,5)
00       143  FORMAT(3X,I3,5F5.0)
00            IF(IPCWH.LT.0.OR.IPCWH.GT.100) GO TO 147
00       145  IF(LNPATH.EQ.2) GO TO 150
00            DO 146 I=1,5
00            IF(RATSEC(I).LT.0.0) GO TO 147
00       146  CONTINUE
00            GO TO 150
00       147  WRITE(IWRI,149)
00       149  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 6M)
00            ISTOP=1
00            WRITE(IWRI,107)
00      C
00      C
00      C     READ AND EDIT CARD TYPE 7
00      C
00      C
00       150  DO 153 IG=1,NGRID
```

```
*** F05 ***                                                    *** F05 ***
@ELT,L CEM.MAPPREPRS
ELT BR1 S7491C 04/23/82 15:45:07 (1)
     1.          00     @MAP ,CEM.PREPRS
     2.          01      IN CEM.PREPRS
     3.          01      IN CEM.FTP
     4.          01      IN CEM.CORFAC
     5.          01      IN CEM.MODMOD
     6.          01      IN CEM.MOBLE1
     7.          01      IN CEM.INPUT
     8.          01      IN CEM.OUTPUT
     9.          01      IN CEM.EFCALX
    10.          01      IN CEM.BIGCFX
    11.          01      IN CEM.TRKOPC
    12.          01      IN CEM.SPFCLX
    13.          01      IN CEM.INITEX
    14.          01      IN CEM.TFCALX
    15.          01      IN CEM.EFALTX
    16.          01      IN CEM.GETCUM
    17.          01      IN CEM.BEFGEN
    18.          01      IN CEM.ALUM
    19.          01      IN CEM.CCEVAX
    20.          01      IN CEM.LDVIMX
    21.          01      IN CEM.BLKDAT
    22.          00      LIB FTN*RLIB.
    23.          00     END

END ELT.  ERRORS: NONE. TIME:  0.213 SEC. IMAGE COUNT: 23

@MDG,P  ******  MOBLE1  ******
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```
@ELT,L CEM.NPATHE
ELT 8R1 S7491C 04/23/82 15:45:15 (0)
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*** F06 ***

```
      1.          00            SUBROUTINE NPATHE
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE COMPUTES THE EMISSION RATES FOR EACH GRID SQUARE
      5.          00      C     (FROM NON-PATHWAY SOURCES)
      6.          00      C
      7.          00      C
      8.          00            COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
      9.          00            COMMON/RUNTYP/MODRUN
     10.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     11.          00            COMMON/GRID/XG(500),YG(500),GVMT(500),IGLOC(500),GEMIS(500),
     12.          00           1GSIZE(500)
     13.          00            COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     14.          00            COMMON/GREMIS/EGRID(500,3,2)
     15.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     16.          00            COMMON/EMSFAC/OUTFAC(2,11,3),GRDFAC(2,5,3),EMCR1(2,3,6),
     17.          00           1EMAD1(2,3,6),EMIDLE(3)
     18.          00            IF(MODRUN.EQ.2) GO TO 51
     19.          00      C
     20.          00      C     ANNUAL MODE
     21.          00      C
     22.          00            IF(LNPATH.EQ.2) GO TO 40
     23.          00      C
     24.          00      C     COMPUTE GRID SQUARE EMISSION RATE
     25.          00            DO 20 IG=1,NGRID
     26.          00      C     CONVERT SIZE OF GRID SQUARE TO KM
     27.          00            GSIZE(IG)=GSIZE(IG)*1.6093*CONVRT
     28.          00      C     DETERMINE LOCALE TYPE
     29.          00            LOC=IGLOC(IG)
     30.          00      C     INCLUDE SECONDARY STREET VMT
     31.          00            VMT=GVMT(IG)*(1.+RATSEC(LOC))
     32.          00      C     CONVERT DAILY VMT TO HOURLY VMT, MULTIPLY BY EMISSION FACTOR, AND
     33.          00      C     DIVIDE BY AREA TIMES SEC/HR CONVERSION FACTOR
     34.          00      C     EMISSION RATE EGRID IS IN GRAMS/M**2-SEC
     35.          00            DENOM=3.6E11*GSIZE(IG)**2
     36.          00            DO 10 IP=1,2
     37.          00            EGRID(IG,IP,1)=VMT*GRDFAC(1,LOC,IP)*IAMPC/DENOM
     38.          00       10   EGRID(IG,IP,2)=VMT*GRDFAC(2,LOC,IP)*IPMPC/DENOM
     39.          00       20   CONTINUE
     40.          00            GO TO 100
     41.          00      C
     42.          00      C     CONVERT USER-SUPPLIED DAILY EMISSION RATE TO HOURLY EMISSION RATE
     43.          00       40   DO 50 IG=1,NGRID
     44.          00            DO 50 IP=1,2
     45.          00            EGRID(IG,IP,1)=GEMIS(IG)*IAMPC/3.6E5
     46.          00       50   EGRID(IG,IP,2)=GEMIS(IG)*IPMPC/3.6E5
     47.          00            GO TO 100
     48.          00      C
     49.          00      C     SHORT-TERM MODE
     50.          00      C
     51.          00       51   IF(LNPATH.EQ.2) GO TO 70
     52.          00      C
     53.          00      CC     COMPUTE GRID SQUARE EMISSION RATE
     54.          00            DO 60 IG=1,NGRID
     55.          00      C     CONVERT SIZE OF GRID SQUARE TO KM
     56.          00            GSIZE(IG)=GSIZE(IG)*1.6093*CONVRT
     57.          00      C     DETERMINE LOCALE TYPE
     58.          00            LOC=IGLOC(IG)
     59.          00      C     INCLUDE SECONDARY STREET VMT
     60.          00            VMT=GVMT(IG)*(1.+RATSEC(LOC))
     61.          00      C     CONVERT DAILY VMT TO HOURLY VMT, MULTIPLY BY THE EMISSION FACTOR,
     62.          00      C     AND DIVIDE BY AREA TIMES SEC/HR CONVERSION FACTOR
     63.          00      C     EMISSION RATE EGRID IS IN GRAMS/M**2-SEC
     64.          00            DO 55 IP=1,2
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   131.          00      54   TR=W2/WSPD(IWS)                                                                    *** F07 ***
   132.          00     C     THIS IS ALOG (SIGMA Z) AT W2
   133.          00      55   SGZ1=ALOG(1.8+0.11*TR)+1.148698
   134.          00           PZ2=(SZ10-SGZ1)/(DREF-ALOG(W2))
   135.          00           PZ1=EXP((SZ10+SGZ1-PZ2*(DREF+ALOG(W2)))/2.)
   136.          00           DO 56 IAMPM=1,KTIME
   137.          00           DO 56 IP=2,2
   138.          00      56   CON(IAMPM,IP)=0.
   139.          00      80   IF(SGN.EQ.-1.0.AND.UWL.GT.0.0.AND.DWL.GE.0.) GO TO 900
   140.          00     C
   141.          00     C     ELEMENT LOOP
   142.          00           ED1=0.
   143.          00           ED2=SGN*WL
   144.          00     C     INITIALIZATION OF ELEMENT LIMITS
   145.          00     110   IF(SGN.EQ.-1.) GO TO 160
   146.          00           IF(ED1.LE.DWL.AND.ED2.LE.DWL) GO TO 770
   147.          00           IF(ED1.GT.DWL.AND.ED2.LT.UWL) GO TO 240
   148.          00           IF(ED1.LE.DWL) ED1=DWL
   149.          00           IF(ED2.LT.UWL) GO TO 250
   150.          00           ED2=UWL
   151.          00           SGN=-1.
   152.          00           NE=-1.
   153.          00           GO TO 250
   154.          00      160  IF(ED1.GE.UWL.AND.ED2.GE.UWL) GO TO 770
   155.          00           IF(ED1.LT.UWL.AND.ED2.GT.DWL) GO TO 250
   156.          00           IF(ED1.GE.UWL) ED1=UWL
   157.          00           IF(ED2.GT.DWL) GO TO 250
   158.          00           ED2=DWL
   159.          00           FINI=0.
   160.          00     C     THESE ARE ELEMENT HALF-DISTANCE AND CENTERLINE DISTANCE
   161.          00      250  EL2=ABS(ED2-ED1)/2.
   162.          00           ECLD=(ED1+ED2)/2.
   163.          00     C     THIS IS EQUIVALENT LINE HALF-LENGTH
   164.          00           ELL2=W2/COS(PHI)+(EL2-W2*TAN(PHI))*SIN(PHI)
   165.          00     C     THESE ARE CENTRAL SUB-ELEMENT HALF-LENGTH AND HALF-WIDTH
   166.          00           IF(PHI.GE.ATAN(W2/EL2))CSL2=W2/SIN(PHI)
   167.          00           IF(PHI.LT.ATAN(W2/EL2))CSL2=EL2/COS(PHI)
   168.          00           EM2=ABS((EL2-W2/TAN(PHI))*SIN(PHI))
   169.          00     C     THIS IS PERIPHERAL SUB-ELEMENT WIDTH
   170.          00           EN2=(ELL2-EM2)/2.
   171.          00     C      THIS IS THE CENTRAL SUBELEMENT LINEAL SOURCE STRENGTH IN GRAMS/
   172.          00     C     M-SEC
   173.          00           DO 255 IP=2,2
   174.          00           QE(1,IP)=ERATEA(IPATH,LINK,IP)*CSL2/W2
   175.          00           IF(MODRUN.EQ.2) GO TO 255
   176.          00           QE(2,IP)=ERATEP(IPATH,LINK,IP)*CSL2/W2
   177.          00      255  CONTINUE
   178.          00     C     THIS IS ELEMENT FETCH
   179.          00           FET=ECLD*COS(PHI)
   180.          00     C     THIS IS Y DISTANCE FROM ELEMENT CENTER TO RECEPTOR
   181.          00           YE=ECLD*SIN(PHI)
   182.          00     C
   183.          00     C     DETERMINE SIGMA Y AND SIGMA Z
   184.          00           IF(FET.LE.-CSL2) GO TO 330
   185.          00           IF(FET.GE.CSL2) GO TO 320
   186.          00     C     RECEPTOR WITHIN ELEMENT
   187.          00           DO 260 IP=2,2
   188.          00           DO 260 IAMPM=1,KTIME
   189.          00      260  QE(IAMPM,IP)=QE(IAMPM,IP)*(FET+CSL2)/(2.*CSL2)
   190.          00           FET=(CSL2+FET)/2.
   191.          00      320  SGZ=PZ1*FET**PZ2
   192.          00           SGY=PY1*FET**PY2
   193.          00     C     THIS IS SOURCE STRENGTH-WIND SPEED FACTOR
   194.          00           FAC1=0.399/(SGZ)
   195.          00     C
   196.          00     C     ADJUSTMENT FOR ELEMENT END EFFECT
```

```
      01            IF(IPATH.EQ.NOPT2(KP)) GO TO 101
      01       100  CONTINUE
      01            GO TO 105
      01       101  CMNO2A(ICA,IP,KP)=CMNO2A(ICA,IP,KP)+NCOMM(IPATH,1)*TOTTT(IPATH,1)
      01           1*FREQA(ISTAB,IWDIR,IWSPD)
      01            CMNO2P(ICP,IP,KP)=CMNO2P(ICP,IP,KP)+NCOMM(IPATH,2)*TOTTT(IPATH,2)
      01           1*FREQP(ISTAB,IWDIR,IWSPD)
      01            GO TO 105
      01       C     SET FLAG THAT MET CONDITIONS CALLED FOR IN OPTION 3 NEVER OCCUR
      01       102  IF(IPATH.NE.NOPT3) GO TO 105
      01            DO 103 IOPT3=1,JOPT3
      01            IF(ISTAB.NE.NSTAB3(IOPT3).OR.IWDIR.NE.NWD3(IOPT3)) GO TO 103
      01            IF(IWSPD.EQ.NWS3(IOPT3)) GO TO 104
      01       103  CONTINUE
      01            GO TO 105
      01       104  EXP3(IOPT3,IP,1)=-99.
      01            EXP3(IOPT3,IP,2)=-99.
      01       105  CONTINUE
      01       106  CONTINUE
      01       110  CONTINUE
      01       C
      01       C     ADD AVERAGE PATHWAY EXPOSURE TO NETWORK EXPOSURE SUM AND COMPUTE
      01       C     AVERAGE PATHWAY CONCENTRATION FOR EACH PATHWAY
      01            DO 111 IAMPM=1,2
      01            EXPSUM(IP,IAMPM)=EXPSUM(IP,IAMPM)+EXP(IPATH,IP,IAMPM)
      03       111  AVCONC(IP,IPATH,IAMPM)=EXP(IPATH,IP,IAMPM)/TOTTT(IPATH,IAMPM)
      01       C
      01       C     MAKE REMAINING COMPUTATIONS FOR OPTION 1, IF CALLED FOR
      01            IF(JOPT1.EQ.0) GO TO 120
      01            DO 115 KP=1,JOPT1
      01            IF(IPATH.EQ.NOPT1(KP)) GO TO 116
      01       115  CONTINUE
      01            GO TO 120
      01       116  TSUMA=0.
      01            TSUMP=0.
      01            DO 117 IC=1,10
      01            TSUMA=TSUMA+COMO1A(IC,IP,KP)
      01       117  TSUMP=TSUMP+COMO1P(IC,IP,KP)
      01            DO 118 IC=1,10
      01            COMO1A(IC,IP,KP)=COMO1A(IC,IP,KP)/TSUMA*100.
      01       118  COMO1P(IC,IP,KP)=COMO1P(IC,IP,KP)/TSUMP*100.
      01       C
      01       C     MAKE REMAINING COMPUTATIONS FOR OPTION 2, IF CALLED FOR
      01       120  IF(JOPT2.EQ.0) GO TO 130
      01            DO 125 KP=1,JOPT2
      01            IF(IPATH.EQ.NOPT2(KP)) GO TO 126
      01       125  CONTINUE
      01            GO TO 130
      01       126  TSUMA=0.
      01            TSUMP=0.
      01            DO 127 IC=1,10
      01            TSUMA=TSUMA+CMNO2A(IC,IP,KP)
      01       127  TSUMP=TSUMP+CMNO2P(IC,IP,KP)
      01            DO 128 IC=1,10
      01            CMNO2A(IC,IP,KP)=CMNO2A(IC,IP,KP)/TSUMA
      01       128  CMNO2P(IC,IP,KP)=CMNO2P(IC,IP,KP)/TSUMP
      01       130  CONTINUE
      01       135  CONTINUE
      01       C
      01       C     COMPUTE PERCENTAGE OF COMMUTERS IN EACH CLASS AND PROBABILITY OF
      01       C     EXPERIENCING EXPOSURE LEVELS IN EACH CLASS
      01            DO 143 IAMPM=1,2
      01            DO 143 IP=2,2
      01            TOTCOM=0.
      01            TOTCMN=0.
      01            DO 140 IC=1,10
```

*** F08 ***

*** G01 ***

```
      1.          00            SUBROUTINE ART(N,L,M,K9,M9)
      2.          00      C     THIS SUBROUTINE TREATS TRAFFIC ON ARTERIALS.
      3.          00            COMMON/RUNTYP/MODRUN
      4.          00            COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
      5.          00           1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
      6.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
      7.          00            COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
      8.          00            COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
      9.          00           1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     10.          00            COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
     11.          00            COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     12.          00            COMMON/SPREAD/ DIURN(3,24,2),SEASON(3,12)
     13.          00            COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     14.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTT(5,2)
     15.          00            COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     16.          00      C
     17.          00      C
     18.          00      C
     19.          00      C
     20.          00      C
     21.          00      C
     22.          00
     23.          00            LNKDIR=M9
     24.          00            IHOUR=1
     25.          00            IF (M.GE.3.OR.MODRUN.EQ.2.AND.IBOUND.EQ.2) IHOUR=2
     26.          00            IF(LPATH.EQ.1) GO TO 5
     27.          00            LSPEED=5*INT(LINSPD(N,L,M)/5.+0.5)
     28.          00            LINSPD(N,L,M)=LSPEED
     29.          00            IF(LSPEED.GT.5) GO TO 50
     30.          00            WRITE(6,15)
     31.          00         15 FORMAT( 1X,98HWARNING.  NON-ZERO SPEED MUST BE INPUT WITH EMISSION
     32.          00           1S.  A VALUE OF 35 MPH IS ASSUMED FOR THIS RUN.)
     33.          00            LINSPD(N,L,M)=35
     34.          00            GO TO 50
     35.          00          5 LNKTYP=LINTYP(N,L)
     36.          00            IF(IVSPRD(N,L)) 10,20,30
     37.          00      C     VOLUMES ARE ADT
     38.          00         10 VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
     39.          00            GO TO 35
     40.          00      C     VOLUMES ARE AADT.
     41.          00         30 IF(MODRUN.EQ.1) GO TO 10
     42.          00            MON=IDATE(2)
     43.          00            VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
     44.          00           1*SEASON(LNKTYP,MON)
     45.          00            GO TO 35
     46.          00         20 VOLHR(N,L,M)=VOLHR(N,L,M)
     47.          00         35 IF(IVFORM(N,L).NE.-1) VOLHR(N,L,M)=VOLHR(N,L,M)*NLANE(N,L,M9)
     48.          00      C     VARIABLE LINSPD DENOTES THE SPEED IN MPH ON THE LINK.  A VALUE OF
     49.          00      C     0 IMPLIES THAT SPEED IS TO BE CALCULATED.  THIS REQUIRES THAT
     50.          00      C     CAPACITY BE KNOWN.
     51.          00            IF(LINSPD(N,L,M).GT.0) GO TO 50
     52.          00            IF(LINCAP(N,L).GT.0) GO TO 40
     53.          00            LINCAP(N,L)=1500.
     54.          00            IF(IVFORM(N,L).NE.-1) LINCAP(N,L)=NLANE(N,L,M9)*1500.
     55.          00         40 VC=VOLHR(N,L,M)/LINCAP(N,L)
     56.          00            IF(VC.LE.1.0) GO TO 45
     57.          00      C
     58.          00      C
     59.          00      C
     60.          00            WRITE(6,100) N,L
     61.          00      C
     62.          00      C
     63.          00      C
     64.          00        100 FORMAT( 1X,25HWARNING. **********,/,1X,44H VOLUME IS GREATER
                              1THAN CAPACITY ON PATHWAY ,I3,7H, LINK ,I3,1H.,/,1X,68H VOLUME IS G
```

 *** G02 ***

```
00      *      13,22,28,34,39,43,46,49,51,54,55,57,58,59,61,61,62,63,64/    00178500
00       DATA DUM2/
00      *       4,11,22,32,42,49,54,58,62,64,66,68,69,71,72,73,74,74,75,    00178600
00      *       4,13,25,37,46,53,58,62,65,67,69,71,72,73,74,75,76,77,77,    00178700
00      *       4,15,28,40,49,55,60,64,67,69,71,72,74,75,76,77,77,78,79,    00178800
00      *       5,17,31,43,51,58,63,66,69,71,73,74,75,76,77,78,79,79,80,    00178900
00      *       5,18,32,44,53,59,63,67,70,72,73,75,76,77,78,79,79,80,81,    00179000
00      *       3, 7,14,23,31,38,44,49,53,56,58,60,62,63,65,66,67,68,69,    00179100
00      *       3, 7,15,24,33,40,46,51,54,57,60,62,63,65,66,67,68,69,70,    00179200
00      *       3, 7,16,25,34,41,47,51,55,58,60,62,64,65,67,68,69,70,71,    00179300
00      *       3, 8,17,26,35,42,48,52,56,59,61,63,65,66,68,69,70,71,71,    00179400
00      *       3, 8,17,27,36,43,49,54,57,60,62,64,66,67,68,69,70,71,72/    00179500
00  C                                                                       00179600
00       DATA DUM3
00      *             / 6,13,17,20,25,32,35,40,45,47,49,50,53,53,54,56,57,57,00179700
00      * 58,   9,14,19,25,31,36,43,45,50,51,53,54,55,56,58,58,61,63,63,    00179800
00      *      12,19,27,35,41,44,51,53,55,57,59,61,61,63,65,65,66,66,67,    00179900
00      *      13,24,33,40,46,50,54,57,59,61,63,65,65,66,68,68,69,70,71,    00180000
00      *      14,25,35,42,48,53,56,59,62,64,65,66,68,69,70,70,71,72,72,    00180100
00      *       9,13,15,18,22,26,28,31,33,35,37,39,40,42,44,44,44,46,48,    00180200
00      *      13,16,20,26,31,34,38,41,43,44,45,47,48,50,52,52,53,54,55,    00180300
00      *      14,21,28,33,38,41,45,47,50,52,53,54,56,57,59,60,61,61,62,    00180400
00      *      15,24,31,36,41,44,48,50,52,54,56,58,58,60,61,62,63,63,65,    00180500
00      *      16,26,33,39,43,47,50,53,55,57,59,60,61,63,64,65,65,66,67/    00180600
00       DATA DUM4/
00      *      10,33,51,59,67,70,74,76,78,80,80,81,82,83,84,84,85,85,86,    00180700
00      *      13,36,53,62,69,73,76,78,80,81,82,83,83,84,85,85,86,86,87,    00180800
00      *      15,38,54,64,70,74,77,79,81,82,83,84,85,85,86,86,87,87,87,    00180900
00      *      16,39,54,64,70,74,77,80,81,83,84,85,85,86,87,87,87,88,88,    00181000
00      *      16,39,54,64,70,74,77,80,81,83,84,85,86,86,87,87,88,88,88,    00181100
00      *       7,24,36,52,54,65,66,69,72,75,75,75,77,79,79,80,80,81,81,    00181200
00      *      11,29,45,56,63,68,70,74,76,76,78,80,80,81,82,82,83,84,84,    00181300
00      *      12,32,46,58,65,69,72,75,76,77,80,81,81,82,83,83,84,85,85,    00181400
00      *      14,36,52,62,68,73,76,78,80,81,82,83,84,85,85,86,86,87,87,    00181500
00      *      15,38,54,64,70,74,77,79,81,83,84,85,85,86,87,87,88,88,88/    00181600
00  C                                                                       00181700
00  C                                                                       00181800
00       DATA DUM5
00      *             / 7,13,17,22,26,30,32,35,37,40,41,42,44,45,46,47,48,50,00181900
00      * 50,   9,17,22,27,31,35,37,40,42,44,46,48,49,51,52,53,54,55,56,    00182000
00      *      12,21,27,32,36,40,44,47,49,52,53,55,56,58,59,60,61,62,62,    00182100
00      *      14,23,29,35,39,43,47,50,52,55,56,58,59,60,61,62,63,64,65,    00182200
00      *      15,25,31,36,41,45,49,52,54,56,58,59,61,62,63,64,65,65,66,    00182300
00      *      10,15,20,23,26,28,31,32,34,35,37,37,38,40,41,41,42,43,44,    00182400
00      *      17,25,29,32,36,38,41,42,44,46,47,48,49,50,51,52,52,53,54,    00182500
00      *      21,31,36,40,44,47,49,51,53,55,56,57,58,59,60,61,62,62,63,    00182600
00      *      23,34,39,43,46,49,52,54,56,57,59,60,61,62,63,63,64,65,65,    00182700
00      *      25,36,41,45,49,52,54,56,58,60,61,62,63,64,65,66,67,67,68/    00182800
00       DATA DUM6/
00      *       0, 4, 8,14,20,26,30,33,35,39,42,44,45,48,49,50,50,53,55,    00182900
00      *       0, 5,10,18,23,28,32,37,40,43,45,47,49,51,52,53,54,56,57,    00183000
00      *       1, 6,13,21,27,33,38,42,45,48,50,52,54,56,57,59,60,61,62,    00183100
00      *       1, 6,14,22,28,34,39,43,47,49,52,54,55,57,58,60,61,62,63,    00183200
00      *       2, 7,14,22,29,35,40,44,47,50,52,54,56,58,59,60,61,62,63,    00183300
00      *       0, 2, 7,13,19,24,29,33,37,40,43,45,47,49,50,52,53,54,55,    00183400
00      *       0, 4,11,19,26,32,37,42,45,48,51,53,55,56,58,59,60,62,62,    00183500
00      *       1, 5,13,21,28,34,40,44,48,51,53,55,57,58,60,61,62,63,64,    00183600
00      *       2, 8,18,28,36,42,47,52,55,58,60,62,63,65,66,67,68,69,70,    00183700
00      *       3,12,23,33,42,48,53,57,60,63,65,66,68,69,70,71,72,73,74/    00183800
00  C                                                                       00183900
00       DATA DUM7
00      *             /11,20,26,30,34,40,43,47,50,52,53,55,58,57,58,59,61,60,00184000
00      * 62,  16,23,29,35,40,43,49,51,54,55,57,58,59,60,62,62,64,66,66,    00184100
00      *      20,29,37,42,47,49,55,57,59,61,62,64,64,66,67,68,68,68,70,    00184200
00      *      22,34,41,46,51,55,58,61,63,64,65,67,68,69,70,70,71,72,73,    00184300
00      *      23,35,42,48,53,57,60,62,65,66,68,69,70,71,72,72,73,74,74,    00184400
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     65.          00           GO TO 555                                                                    *** G03 ***
     66.          00      444  COMPEF(I,P,M)=(BEF(I,CYP,P+(M-1)*3)*CFRET(I,P,M))*TF(I,M)                    00045100
     67.          00      C
     68.          00      555  CONTINUE                                                                     00045300
     69.          00      C                                                                                 00045400
     70.          00           IDLFAC(I,P,M)=(IDLBEF(I,CYP,P+(M-1)*3)                    )*TF(I,M)          00045500
     71.          00      C                                                                                 00045600
     72.          00           COMPMY(P,M) = COMPMY(P,M) + COMPEF(I,P,M)                                    00045700
     73.          00           IDLCMP(P,M) = IDLCMP(P,M) + IDLFAC(I,P,M)                                    00045800
     74.          00           IF(P.EQ.1) CCRETM(M) = CCRETM(M) + COMPCC(I,M)                               00045900
     75.          00      C                                                                                 00046000
     76.          00      300       CONTINUE                                                                00046100
     77.          00           WTEDEF(P) = WTEDEF(P) + COMPMY(P,M)*MS(M)                                    00046200
     78.          00           IDLWTD(P) = IDLWTD(P) + IDLCMP(P,M)*MS(M)                                    00046300
     79.          00      400    CONTINUE                                                                   00046400
     80.          00      C                                                                                 00046500
     81.          00      500  CONTINUE                                                                     00046600
     82.          00      C                                                                                 00046700
     83.          00           DO 600 M = 1,6                                                               00046800
     84.          00           DO 600 P = 1,3                                                               00046900
     85.          00             EFRETM(P,M) = COMPMY(P,M)                                                  00047000
     86.          00             IDLRTM(P,M) = IDLCMP(P,M)                                                  00047100
     87.          00      600  CONTINUE                                                                     00047200
     88.          00      C                                                                                 00047300
     89.          00      C                                                                                 00047400
     90.          00           RETURN                                                                       00047500
     91.          00      C                                                                                 00047600
     92.          00           END                                                                          00047700
                                                                                                           00047800
END ELT.  ERRORS: NONE. TIME:  0.403 SEC. IMAGE COUNT: 92

GMDG,P  ******  EMISS  ******
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```
   197.          00            READ(IREAD,151) LGRID,XG(IG),YG(IG),GSIZE(IG),GVMT(IG),IGLOC(IG),
   198.          00           1GEMIS(IG)
   199.          00       151  FORMAT(3X,I3,4F10.0,1X,I1,E10.3)
   200.          00            IF(LGRID.NE.IG) GO TO 158
   201.          00            IF(XG(IG).LE.0.0.OR.YG(IG).LE.0.) GO TO 158
   202.          00            IF(GSIZE(IG).LE.0.) GO TO 158
   203.          00            IF(LNPATH.EQ.2) GO TO 152
   204.          00            IF(GVMT(IG).LE.0.) GO TO 158
   205.          00            IF(IGLOC(IG).LT.1.OR.IGLOC(IG).GT.5) GO TO 158
   206.          00            GO TO 153
   207.          00       152  IF(GEMIS(IG).LT.0.) GO TO 158
   208.          00            GO TO 153
   209.          00       158  WRITE(IWRI,159)
   210.          00       159  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 7M)
   211.          00            ISTOP=1
   212.          00            WRITE(IWRI,107)
   213.          00       153  CONTINUE
   214.          00      C
   215.          00      C
   216.          00      C     READ AND EDIT CARD TYPE 8
   217.          00      C
   218.          00      C
   219.          00       160  IF(MODRUN.EQ.2) GO TO 165
   220.          00      C
   221.          00      C     ANNUAL MODE
   222.          00            DO 163 K=1,6
   223.          00            DO 163 L=1,16
   224.          00            READ(IREAD,161) (FREQA(K,L,M),M=1,6)
   225.          00       161  FORMAT(3X,6F10.0)
   226.          00            DO 162 M=1,6
   227.          00            IF(FREQA(K,L,M).GE.0.0.AND.FREQA(K,L,M).LE.1.) GO TO 162
   228.          00            WRITE(IWRI,169)
   229.          00            ISTOP=1
   230.          00            WRITE(IWRI,107)
   231.          00       162  CONTINUE
   232.          00       163  CONTINUE
   233.          00            DO 1163 K=1,6
   234.          00            DO 1163 L=1,16
   235.          00            READ(IREAD,161) (FREQP(K,L,M),M=1,6)
   236.          00            DO 1162 M=1,6
   237.          00            IF(FREQP(K,L,M).GE.0.0.AND.FREQP(K,L,M).LE.1.) GO TO 1162
   238.          00            WRITE(IWRI,169)
   239.          00            ISTOP=1
   240.          00            WRITE(IWRI,107)
   241.          00      1162  CONTINUE
   242.          00      1163  CONTINUE
   243.          00            GO TO 170
   244.          00      C
   245.          00      C     SHORT-TERM MODE
   246.          00       165  READ(IREAD,166) WS,IWD,ISTAB
   247.          00       166  FORMAT(3X,F10.0,I3,1X,I1)
   248.          00            IF(WS.LT.1.) GO TO 168
   249.          00            IF(IWD.LT.0.OR.IWD.GT.360) GO TO 168
   250.          00            IF(ISTAB.LT.1.OR.ISTAB.GT.5) GO TO 168
   251.          00            GO TO 180
   252.          00       168  WRITE(IWRI,169)
   253.          00       169  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 8M)
   254.          00            ISTOP=1
   255.          00            WRITE(IWRI,107)
   256.          00      C
   257.          00      C
   258.          00      C     READ AND EDIT CARD TYPE 9
   259.          00      C
   260.          00      C
   261.          00       170  READ(IREAD,171) (NOPT1(I),I=1,5),(NOPT2(I),I=1,5),NOPT3,
   262.          00           1(NMET(I),I=1,10),IGRAF
```

*** G04 ***

```
      1.          00          SUBROUTINE MOBLE1(IAMPM,INITFL,CY)
      2.          00     C                                                                  00000100
      3.          00     C                                                                  C0000400
      4.          00     C                                                                  C0000500
      5.          00     C              MOBILE1: MOBILE SOURCE EMISSIONS MODEL              C0000600
      6.          00     C                                                                  C0000700
      7.          00     C                                                                  C0000800
      8.          00     C**MAIN: MAIN ROUTINE FOR CALCULATING MOBILE SOURCE EMISSION FACTORS  00000200
      9.          00     C                                                                  00000300
     10.          00           COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
     11.          00           COMMON/PRE3/JCLDNA(5),JCLDCA(5),JHOTA(5),JCLDNP(5),JCLDCP(5),
     12.          00          1JHOTP(5),JCOLDN(5),JCOLDC(5),JHOT(5)
     13.          00           COMMON/PRE6/ILOOP
     14.          00           COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
     15.          00          1WRMCOR(20,6,3),ACFAC(2,20,3)
     16.          00           COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,  C0000400
     17.          00          *             UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM           C0003500
     18.          00           COMMON/REGCOM/IREJN                                           C0000600
     19.          00           COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,MS                      00000600
     20.          00           COMMON/ALTCOM/INTALT(5,100),R&ALT(2,100),MODFLG(100),NEWFAC   00000700
     21.          00     C
     22.          00           INTEGER ALHFLG,TRKFLG,ALTFLG,ALTKOD(4,20),CY,SP3FLG,UNFFLG,   00000900
     23.          00          *   PRTFLG                                                    00004000
     24.          00           INTEGER CYOLD                                                 00004100
     25.          00           REAL EFRETM(3,6),WTEDEF(3),LNKDTA(7),SPD(3),MS(6),COMCCC(6)   00001100
     26.          00           REAL IDLRTM(3,6),IDLWTD(3)                                    00001200
     27.          00           DIMENSION CFRET(20,3,6)
     28.          00     C
     29.          00           EQUIVALENCE (SPD(1),LNKDTA(1))                                00001300
     30.          00     C                                                                   00001400
     31.          00           DATA CYOLD/0/                                                 00001500
     32.          00           DATA IRJOLD/0/
     33.          00     C     DATA INITFL/1/                                                00001600
     34.          00           IF(INITFL.EQ.0) GO TO 100
     35.          00     C
     36.          00     C*************************************************************      00001800
     37.          00     C                                                                   00001900
     38.          00           CALL INPUT(INITFL,CY,ICYPR,RSPD)                              00002000
     39.          00     C
     40.          00     C*************************************************************      00002200
     41.          00     C                                                                   00002300
     42.          00           INITFL=0                                                      00002400
     43.          00      100  CONTINUE
     44.          00     C
     45.          00           IF(ILOOP.EQ.1.OR.ILOOP.EQ.3) GO TO 1001                       00002600
     46.          00           NITER=5
     47.          00           GO TO 1002
     48.          00      1001 NITER=12
     49.          00      1002 RSPD=0.
     50.          00           DO 1010 II=1,NITER
     51.          00           GO TO (1004,1005,1006,1007) ILOOP
     52.          00      1004 RSPD=RSPD+5.
     53.          00           GO TO 1015
     54.          00      1005 IF(II.EQ.1) RSPD=19.6
     55.          00           IF(JDUMY.EQ.2) GO TO 1008
     56.          00           INCC=JCLDNA(II)
     57.          00           ICH=JHOTA(II)
     58.          00           ICC=JCLDCA(II)
     59.          00           GO TO 1015
     60.          00      1008 INCC=JCLDNP(II)
     61.          00           ICH=JHOTP(II)
     62.          00           ICC=JCLDCP(II)
     63.          00           GO TO 1015
     64.          00      1006 RSPD=RSPD+5.
```

```
*** G06 ***                                                                                                    *** G06 ***
    65.          00      55   EGRID(IG,IP,1)=VMT*GRDFAC(1,LOC,IP)*IPCWH/(3.6E11*GSIZE(IG)**2)
    66.          00      60   CONTINUE
    67.          00           GO TO 100
    68.          00     C
    69.          00     C     CONVERT USER-SUPPLIED DAILY EMISSION RATE TO HOURLY EMISSION RATE
    70.          00      70   DO 80 IG=1,NGRID
    71.          00           DO 80 IP=2,2
    72.          00      80   EGRID(IG,IP,1)=GEMIS(IG)*IPCWH/3.6E5
    73.          00     100   CONTINUE
    74.          00           RETURN
    75.          00           END

END ELT.  ERRORS: NONE. TIME:  0.293 SEC. IMAGE COUNT: 75

@HDG,P  ******  OUTPUT  ******
```

```
197.          00      C     (POLYNOMIAL APPROZIMATION)                                    *** G07 ***
198.          00      C
199.          00            Y(1)=YE+ELL2
200.          00            Y(2)=Y(1)-EN2
201.          00            Y(3)=Y(2)-EN2
202.          00            Y(4)=Y(3)-2*EM2
203.          00            Y(5)=Y(4)-EN2
204.          00            Y(6)=Y(5)-EN2
205.          00      C
206.          00      C     SUBELEMENT SOURCE STRENGTH LOOP
207.          00            DO 480 I=1,6
208.          00            LIM=ABS(Y(I)/SGY)
209.          00            T=1./(1.+0.23164*LIM)
210.          00            ARG=LIM**2/(-2.)
211.          00            IF(LIM.GT.5.) INTG(I)=0.
212.          00            IF(LIM.LE.5.) INTG(I)=0.3989*EXP(ARG)*(0.3194*T-0.3566*T**2+
213.          00           11.7815*T**3-1.8213*T**4+1.3303*T**5)
214.          00       480  CONTINUE
215.          00            DO 485 IP=2,2
216.          00            DO 485 IAMPM=1,KTIME
217.          00       485  FAC2(IAMPM,IP)=0.
218.          00            DO 530 I=1,5
219.          00      C     SET NORMAL PROBABILITY DENSITY FUNCTION
220.          00            IF((SIGN(1.,Y(I))).EQ.(SIGN(1.,Y(I+1))))
221.          00           1PD=ABS(INTG(I+1)-INTG(I))
222.          00            IF((SIGN(1.,Y(I))).NE.(SIGN(1.,Y(I+1))))
223.          00           1PD=1.-INTG(I)-INTG(I+1)
224.          00            DO 520 IP=2,2
225.          00            DO 520 IAMPM=1,KTIME
226.          00       520  FAC2(IAMPM,IP)=FAC2(IAMPM,IP)+PD*QE(IAMPM,IP)*WT(I)
227.          00       530  CONTINUE
228.          00            DO 535 IP=2,2
229.          00            DO 535 IAMPM=1,KTIME
230.          00            FACT=FAC1*FAC2(IAMPM,IP)
231.          00      C
232.          00      C     INCREMENTAL CONCENTRATION FROM ELEMENT AND SUMMATION OF CONCEN-
233.          00      C     TRATIONS
234.          00            INC=FACT*2
235.          00       535  CON(IAMPM,IP)=CON(IAMPM,IP)+INC
236.          00            IF(FINI.EQ.0.) GO TO 900
237.          00       770  NE=NE+1.
238.          00      C     THIS IS STEP FACTOR
239.          00            STP=BASE**NE
240.          00            IF(NE.EQ.0.) GO TO 80
241.          00      C     INCREMENT TO NEXT ELEMENT
242.          00            ED1=ED2
243.          00            ED2=ED2+SGN*STP*WL
244.          00            GO TO 110
245.          00       830  IF(SGN.EQ.1.) GO TO 770
246.          00      C
247.          00      C     END OF CALINE3 ROUTINE
248.          00       900  CONTINUE
249.          00      C
250.          00      C
251.          00      C     UNITS OF SEMI-NORMALIZED CONCENTRATION C ARE G/M**2-SEC
252.          00      C     IF MORE POLLUTANTS ARE TO BE INCLUDED, THE CONCENTRA-
253.          00      C     TION MATRIX MUST BE REDONE TO STORE THE ADDITIONAL POLLUTANTS.
254.          00      C     THE POLLUTANT DO LOOP IS IN PLACE, BUT THE CONCENTRATION MATRIX
255.          00      C     IS SO LARGE ALREADY THAT WE DID NOT DIMENSION IT FOR MORE
256.          00      C     POLLUTANTS, SINCE CO IS THE ONLY POLLUTANT BEING TREATED AT THE
257.          00      C     PRESENT TIME.
258.          00      C
259.          00      C
260.          00            DO 920 IP=2,2
261.          00            DO 920 IAMPM=1,KTIME
262.          00            IF(MODRUN.EQ.1) ISTWD=16*(JSTAB-1)+JWD
```

```
*** G08 ***                                                                    *** G08 ***
   263.          01              TOTCOM=TOTCOM+COMSUM(IC,IP,IAMPM)
   264.          01       140    TOTCMN=TOTCMN+CMNSUM(IC,IP,IAMPM)
   265.          01              DO 141 IC=1,10
   266.          01              COMSUM(IC,IP,IAMPM)=COMSUM(IC,IP,IAMPM)/TOTCOM*100.
   267.          01       141    CMNSUM(IC,IP,IAMPM)=CMNSUM(IC,IP,IAMPM)/TOTCMN
   268.          01              EXPSUM(IP,IAMPM)=EXPSUM(IP,IAMPM)/NPATHS
   269.          01       143    CONTINUE
   270.          01          C
   271.          01          C   COMPUTE AVERAGE NETWORK EXPOSURE
   272.          01              RETURN
   273.          01              END

END ELT.  ERRORS: NONE. TIME:  0.551 SEC. IMAGE COUNT: 273

@HDG,P  ******  STREET  ******
```

```
*** H01 ***                                                                                                    *** H01 ***
    65.          00          2EING SET EQUAL TO CAPACITY FOR THIS RUN.  CHECK INPUTS..)
    66.          00           VOLHR(N,L,M)=LINCAP(N,L)-1.0
    67.          00           GO TO 40
    68.          00        45 SPEED=32.-EXP(6.97*VC-4.13)
    69.          00           LSPEED=5*INT(SPEED/5.+0.5)
    70.          00           LINSPD(N,L,M)=LSPEED
    71.          00        50 EXDIST=CONVRT*SQRT((X1(N,L)-X2(N,L))**2+(Y1(N,L)-Y2(N,L))**2)
    72.          00           LSPEED=LINSPD(N,L,M)
    73.          00           HALF=EXDIST/2.
    74.          00           LINSPD(N,L,M)=LINSPD(N,L,M)/5-1
    75.          00           IF(K9.EQ.0) GO TO 2000
    76.          00           TT1(N,L,M9)=HALF*60./LSPEED
    77.          00           TT2(N,L,M9)=TT1(N,L,M9)
    78.          00      1000 CONTINUE
    79.          00           IF(M.EQ.2.OR.M.EQ.4) GO TO 2000
    80.          00           TT3=TT1(N,L,M9)
    81.          00           TT1(N,L,M9)=TT2(N,L,M9)
    82.          00           TT2(N,L,M9)=TT3
    83.          00      2000 CONTINUE
    84.          00      C
    85.          00      C
    86.          00      C
    87.          00           RETURN
    88.          00           END

END ELT.  ERRORS: NONE. TIME:  0.298 SEC. IMAGE COUNT: 88

$HDG,P  ******  BEFGEN  ******
```

*** H02 ***

```
00      *      17,25,27,31,35,38,40,43,44,45,49,50,50,53,54,54,55,56,58,   00184500
00      *      26,33,36,41,46,48,51,54,56,57,58,59,60,61,63,63,64,65,66,   00184600
00      *      30,41,47,50,54,57,59,61,63,65,65,66,67,68,69,70,71,71,71,   00184700
00      *      32,45,50,54,57,60,63,64,65,67,68,69,70,71,72,72,73,73,74,   00184800
00      *      33,47,52,56,60,62,65,67,68,69,70,71,72,73,74,74,75,75,76/   00184900
00       DATA DUM8/
00      *       5,24,40,48,56,60,65,67,69,72,72,74,75,76,77,78,78,79,79,   00185000
00      *       8,27,42,51,58,63,66,69,71,73,74,76,76,77,78,79,79,80,80,   00185100
00      *      11,29,43,52,59,64,67,70,72,74,75,76,77,78,79,80,80,81,81,   00185200
00      *      13,30,43,52,59,64,68,71,73,75,76,77,78,79,80,80,81,82,82,   00185300
00      *      14,30,43,52,59,64,68,71,73,75,76,77,78,79,80,81,81,82,82,   00185400
00      *       9,30,41,56,58,68,68,71,74,77,77,78,79,81,81,81,81,82,83,   00185500
00      *      15,37,51,60,66,70,72,76,77,78,80,82,82,82,83,84,84,85,85,   00185600
00      *      18,39,52,62,68,71,74,77,78,79,82,82,82,84,84,84,85,86,86,   00185700
00      *      21,43,57,66,71,75,78,80,81,83,84,85,85,86,86,87,87,88,88,   00185800
00      *      23,44,58,66,72,76,79,81,83,84,85,86,86,87,88,88,88,89,89/   00185900
00    C                                                                    00186000
00       END                                                               00186100
```

END ELT. ERRORS: NONE. TIME: 1.230 SEC. IMAGE COUNT: 478

@HDG,P ****** BLKDAT1 ******

```
@ELT,L CEM.EMISS                                                                                                    *** H03 ***
ELT 8R1 S7491C 04/23/82 15:44:53 (0)
      1.          00          SUBROUTINE EMISS
      2.          00     C
      3.          00     C
      4.          00     C    THIS SUBROUTINE COMPUTES THE EMISSION RATE ON EACH PATHWAY SEGMENT
      5.          00     C    USING THE EMISSION FACTORS COMPUTED BY THE PREPROCESSOR.  FTP
      6.          00     C    EMISSION FACTORS ARE USED FOR FREEWAY, EXPRESSWAY, OR NON-CBD
      7.          00     C    SEGMENTS WHILE MODAL EMISSION FACTORS ARE USED ON ALL CBD
      8.          00     C    SEGMENTS THAT ARE NOT FREEWAYS
      9.          00     C
     10.          00     C
     11.          00          COMMON/RUNTYP/MODRUN
     12.          00          COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
     13.          00         1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
     14.          00          COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     15.          00          COMMON/PAEMIS/EPATEA(5,20,3),ERATEP(5,20,3),W(5,20)
     16.          00          COMMON/EMSFAC/OUTFAC(2,11,3),GRDFAC(2,5,3),EMCRI(2,3,6),
     17.          00         1EMAD1(2,3,6),EMIDLE(3)
     18.          00          COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
     19.          00          COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     20.          00          COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     21.          00          COMMON/TRAFIN/LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     22.          00         1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     23.          00          COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
     24.          00          DO 500 IPATH=1,NPATHS
     25.          00          NSEGS=NSEG(IPATH)
     26.          00          DO 500 LINK=1,NSEGS
     27.          00     C
     28.          00     C    COMPUTE STREET WIDTH IN M AND LENGTH IN MI
     29.          00     C
     30.          00          W(IPATH,LINK)=(NLANE(IPATH,LINK,1)+NLANE(IPATH,LINK,2))*LANWID
     31.          00         1(IPATH,LINK)*.3048
     32.          00          IF(LPATH.EQ.2) GO TO 500
     33.          00          SEGL=SQRT((X1(IPATH,LINK)-X2(IPATH,LINK))**2+(Y1(IPATH,LINK)-Y2(I
     34.          00         1PATH,LINK))**2)
     35.          00          SEGL=SEGL*CONVRT
     36.          00          IF(MODRUN.EQ.2) GO TO 5
     37.          00     C
     38.          00     C    ANNUAL MODE
     39.          00     C
     40.          00          VOLAC=VOLHR(IPATH,LINK,1)
     41.          00          VOLAO=VOLHR(IPATH,LINK,2)
     42.          00          VOLPC=VOLHR(IPATH,LINK,4)
     43.          00          VOLPO=VOLHR(IPATH,LINK,3)
     44.          00          ISPDAC=LINSPD(IPATH,LINK,1)
     45.          00          ISPDAO=LINSPD(IPATH,LINK,2)
     46.          00          ISPDPC=LINSPD(IPATH,LINK,4)
     47.          00          ISPDPO=LINSPD(IPATH,LINK,3)
     48.          00          GO TO 8
     49.          00     C
     50.          00     C    SHORT-TERM MODE
     51.          00     C
     52.          00      5   VOLC=VOLHR(IPATH,LINK,1)
     53.          00          VOLO=VOLHR(IPATH,LINK,2)
     54.          00          ISPDC=LINSPD(IPATH,LINK,1)
     55.          00          ISPDO=LINSPD(IPATH,LINK,2)
     56.          00     C
     57.          00     C    CHECK WHICH TYPE OF EMISSION TREATMENT IS TO BE USED
     58.          00        8 IF(INTYPE(IPATH,LINK).EQ.2) GO TO 100
     59.          00          IF(MODRUN.EQ.2) GO TO 50
     60.          00     C
     61.          00     C
     62.          00     C    ANNUAL MODE
     63.          00     C
     64.          00     C
```

```
  263.          00      171  FORMAT(3X,11I2,10I3,1X,I1)                                                    *** H04 ***
  264.          00           JOPT1=0
  265.          00           JOPT2=0
  266.          00           JOPT3=0
  267.          00           DO 175 I=1,10
  268.          00           IF(I.GT.5) GO TO 174
  269.          00           IF(NOPT1(I).LE.0) GO TO 172
  270.          00           JOPT1=JOPT1+1
  271.          00           IF(NOPT1(I).GT.NPATHS) GO TO 178
  272.          00      172  IF(NOPT2(I).LE.0) GO TO 174
  273.          00           JOPT2=JOPT2+1
  274.          00           IF(NOPT2(I).GT.NPATHS) GO TO 178
  275.          00      174  IF(NMET(I).LE.0) GO TO 175
  276.          00           JOPT3=JOPT3+1
  277.          00           IF(NMET(I).GT.576) GO TO 178
  278.          00      175  CONTINUE
  279.          00           IF(JOPT3.LE.0) GO TO 180
  280.          00           IF(NOPT3.GT.0.AND.NOPT3.LE.NPATHS) GO TO 180
  281.          00      178  WRITE(IWRI,179)
  282.          00      179  FORMAT(//,5X,30HERRONEOUS DATA ON CARD TYPE 9M)
  283.          00           ISTOP=1
  284.          00           WRITE(IWRI,107)
  285.          00     C
  286.          00     C
  287.          00     C     READ OUTPUT OF EMISSION FACTOR PREPROCESSOR
  288.          00     C
  289.          00     C
  290.          00      180  IF(ISTOP.EQ.1) STOP
  291.          00           IF(MODRUN.EQ.2) GO TO 1184
  292.          00     C
  293.          00     C     MODEL IS IN ANNUAL MODE--READ EMISSION FACTORS FOR NON-CBD
  294.          00     C     PATHWAY VMT
  295.          00           IF(LPATH.EQ.2) GO TO 1179
  296.          00           DO 1177 IP=2,2
  297.          00      1177 READ(IFILE,1178) ((OUTFAC(IAMPM,ISP,IP),ISP=1,11),IAMPM=1,2)
  298.          00      1178 FORMAT(8F12.5)
  299.          00     C
  300.          00     C     MODEL IS IN ANNUAL MODE--READ EMISSION FACTORS FOR GRIDDED VMT
  301.          00      1179 IF(LNPATH.EQ.2) GO TO 1182
  302.          00           DO 1181 IP=2,2
  303.          00      1181 READ(IFILE,1178) ((GRDFAC(IAMPM,IL,IP),IL=1,5),IAMPM=1,2)
  304.          00     C
  305.          00     C     MODEL IS IN ANNUAL MODE--READ EMISSION FACTORS FOR CBD PATHWAY VMT
  306.          00      1182  IF(LPATH.EQ.2) GO TO 1195
  307.          00           DO 1183 IP=2,5
  308.          00      1183 READ(IFILE,1178) ((EMCR1(IAMPM,IP,ISP),EMAD1(IAMPM,IP,ISP),ISP=1,6
  309.          00          1),IAMPM=1,2)
  310.          00           GO TO 1190
  311.          00     C
  312.          00     C     MODEL IS IN SHORT-TERM MODE--READ EMISSION FACTORS FOR NON-CBD
  313.          00     C     PATHWAY VMT
  314.          00      1184 IF(LPATH.EQ.2) GO TO 1186
  315.          00           DO 1185 IP=2,2
  316.          00      1185 READ(IFILE,1178) (OUTFAC(1,ISP,IP),ISP=1,11)
  317.          00     C
  318.          00     C     MODEL IS IN SHORT-TERM MODE--READ EMISSION FACTORS FOR GRIDDED VMT
  319.          00      1186 IF(LNPATH.EQ.2) GO TO 1188
  320.          00           DO 1187 IP=2,2
  321.          00      1187 READ(IFILE,1178) (GRDFAC(1,IL,IP),IL=1,5)
  322.          00     C
  323.          00     C     MODEL IS IN SHORT-TERM MODE--READ EMISSION FACTORS FOR CBD
  324.          00     C     PATHWAY VMT
  325.          00      1188 IF(LPATH.EQ.2) GO TO 1195
  326.          00           DO 1189 IP=2,2
  327.          00      1189 READ(IFILE,1178) (EMCR1(1,IP,ISP),EMAD1(1,IP,ISP),ISP=1,6)
  328.          00     C
```

*** H05 ***

```
00              GO TO 1015
00         1007 IF(II.EQ.1) RSPD=19.6
00              INCC=JCOLDN(II)
00              ICH=JHOT(II)
00              ICC=JCOLDC(II)
00         1015 CONTINUE
00        C
00              CALL INPUT(INITFL,CY,ICYPR,RSPD)                              00002800
00        C
00        C     IF(IRDFLG.EQ.0) GO TO 99                                      00003000
00        C                                                                   00003100
00              IF(IREJN.NE.IRJOLD.OR.CYOLD.NE.CY)                            00003200
00             *  CALL INITEX(CY)
00              IF(IMFLG.NE.1) GO TO 10
00              IF(IREJN.NE.IRJOLD.OR.CYOLD.NE.CY)
00             * CALL LDVIMX(CY)
00          10  CONTINUE
00        C
00              CYOLD=CY                                                      00003500
00              IRJOLD = IREJN
00        C                                                                   00003600
00              CALL EFCALX(CY,LNKDTA,MS,EFRETM,WTEDEF,COMCCC,IDLRTM,IDLWTD,CFRET)00003700
00        C                                                                   00
00        C     CALL OUTPUT(ICYPR,EFRETM,WTEDEF,COMCCC,IDLRTM,IDLWTD)         00003900
00        C                                                                   00004000
00        C     TEMPORARILY STORE AM AND PM OR SINGLE COMMUTE COMPOSITE EMISSION
00        C     FACTORS FOR EACH SPEED AND POLLUTANT
00        C
00              DO 1110 IP=2,2
00              TOTEM(IAMPM,II,IP)=WTEDEF(IP)
00              IF(ILOOP.NE.1.AND.ILOOP.NE.3) GO TO 1110
00              IF(II.GT.6) GO TO 1110
00              IF(IAMPM.EQ.2) GO TO 1110
00        C
00        C     FOR ANNUAL MODE STORE AM RATIOS OF COMPOSITE TO LDV EMISSION
00        C     FACTORS FOR EACH POLLUTANT AND EACH SPEED.LE.30 FOR 100 PC WARM
00        C     OPERATION TO USE AS MODAL CORRECTION FACTORS
00        C
00              RATEM(IAMPM,II,IP)=WTEDEF(IP)/EFRETM(IP,1)
00        C
00        C     STORE LDV COLD START/TEMPERATURE/SPEED CORRECTION FACTORS BY MODEL
00        C     YEAR, SPEED, AND POLLUTANT FOR 100 PC WARM OPERATION (TEMPERATURE
00        C     DROPS OUT OF EQUATION) FOR USE IN COMPUTING MODAL CORRECTION
00        C      FACTORS
00        C
00              DO 1009 IMY=1,20
00         1009 WRMCOR(IMY,II,IP)=CFRET(IMY,IP,1)
00         1110 CONTINUE
00         1010 CONTINUE
00        C
00        C     GO TO 100                                                     00004100
00        C
00        C                                                                   00004300
00        C**********************************************************************00004400
00        C                                                                   00004500
00        C99   CONTINUE
00        C
00        C     DEBUG SUBCHK                                                  00004700
00        C     STOP                                                          00004800
00              RETURN
00              END                                                           00005000
```

END ELT. ERRORS: NONE. TIME: 0.375 SEC. IMAGE COUNT: 124

@HDG,P ****** MODE ******

```
      1.          00            SUBROUTINE OUTPUT(CY)
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE PRINTS AND SETS UP FILES OF THE EMISSION FACTOR
      5.          00      C     TABLES
      6.          00      C
      7.          00      C
      8.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,   00008400
      9.          00           *      UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                     00008500
     10.          00            COMMON/MODEM/EMAD1(2,4,6),EMCR1(2,4,6),EMIDLE(4)
     11.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,VMTMIX
     12.          00            COMMON/IMCOM/ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2
     13.          00            COMMON/REGCOM/IREJN
     14.          00            COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
     15.          00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     16.          00           1IACS
     17.          00            COMMON/PRE3/JCLDNA(5),JCLDCA(5),JHOTA(5),JCLDNP(5),JCLDCP(5),
     18.          00           1JHOTP(5),JCOLDN(5),JCOLDC(5),JHOT(5)
     19.          00            COMMON/PRE5/ICOLDN,ICOLDC,IHOTC
     20.          00            COMMON/PRE6/ILOOP
     21.          00            COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
     22.          00           1WRMCOR(20,6,3),ACFAC(2,20,3)
     23.          00            COMMON/MYACOM/MYM,MYR,TF
     24.          00            DIMENSION REGN1(3),REGN2(3),YESNO(2),          VMTMIX(6),SPD(3),
     25.          00           1POL(5,4)
     26.          00            REAL MYM(20,6),MYR(20,6),TF(20,6)
     27.          00            DATA REGN1/4H49 S,4HCALI,4HHI A/
     28.          00            DATA REGN2/4HTATE,4HF   ,4HLT. /
     29.          00            DATA YESNO/4HNO  ,4HYES /
     30.          00            DATA IWRI,IFILE/6,8/
     31.          00            DATA IICS/0/,IICH/100/
     32.          00            DATA POL/4HTOTA,4HL HY,4HDROC,4HARBO,4HNS  ,
     33.          00           1          4HCARB,4HON M,4HONOX,4HIDE ,4H    ,
     34.          00           2          4HNITR,4HOGEN,4H OXI,4HDES ,4H    ,
     35.          00           3          4HEXHA,4HUST ,4HHYDR,4HOCAR,4HBONS/
     36.          00            IF(ILOOP.EQ.1.OR.ILOOP.EQ.3) GO TO 1
     37.          00            IF(ILOOP.GE.5) GO TO 20
     38.          00            IF(LPATH.NE.2) GO TO 20
     39.          00      C
     40.          00      C
     41.          00      C     PRINT HEADING
     42.          00      C
     43.          00      C
     44.          00        1   WRITE(IWRI,10) (MHEAD(I),I=1,10)
     45.          00       10   FORMAT(1H1,2X,10A2,//////////)
     46.          00      C
     47.          00      C
     48.          00      C     PRINT BASIC INFORMATION
     49.          00      C
     50.          00      C
     51.          00            WRITE(IWRI,13) CY,REGN1(IREJN),REGN2(IREJN),(VMTMIX(MX),MX=1,6),
     52.          00           1(TF(MX,I),MX=1,20)
     53.          00       13   FORMAT(16H  CALC. YEAR    19,I2,8X,44HVEH. TYPE   LDV  LDT1  LDT2
     54.          00           1HDG   HDD    MC,/,11H  REGION   ,2A4,17X,5(F5.3,1H/),F5.3,//,11H  L
     55.          00           2DV MODEL,/,10H  YEAR MIX,2X,9(F5.3,1H/),F5.3,/,13X,6(F5.3,1H/),
     56.          00           3F5.3,/)
     57.          00      C
     58.          00      C     PRINT I/M INFORMATION IF APPLICABLE
     59.          00      C
     60.          00            IF(IMFLG.EQ.1) WRITE(IWRI,11) ICYIM,ISTRIN,YESNO(IMTFLG+1)
     61.          00            IF(IMFLG.EQ.1) WRITE(IWRI,12) MODYR1,MODYR2
     62.          00       11   FORMAT(32H  LDV I/M PROGRAM STARTING IN 19,I2,19H, STRINGENCY LEVE
     63.          00          1L ,I2,19H , MECH. TRAINING  ,A4)
     64.          00       12   FORMAT(49H  I/M PROG. BENEFITS APPLY ONLY TO MODEL YEARS 19,I2,
```

```
   263.          00                IF(MODRUN.EQ.2) ISTWD=1
   264.          00           920  C(IAMPM,ISTWD,IWS)=CON(IAMPM,IP)
   265.          00             C  END OF WIND SPEED LOOP
   266.          00           950  CONTINUE
   267.          00             C  END OF STABILITY LOOP
   268.          00           960  CONTINUE
   269.          00             C  END OF WIND DIRECTION LOOP
   270.          00           970  CONTINUE
   271.          00                RETURN
   272.          00                END

END ELT.  ERRORS: NONE. TIME:  0.503 SEC. IMAGE COUNT: 272

@HDG,P  ******  RUNTEST11  ******
```

*** HQ7 ***

```
@ELT,L CEM.STREET
ELT 881 S7401C 04/23/82 15:45:28 (0)
      1.            00            SUBROUTINE STREET(IPATH,LINK,TT)
      2.            00       C
      3.            00       C
      4.            00       C    THIS SUBROUTINE COMPUTES NORMALIZED EXPOSURES (ANNUAL MODE) OR
      5.            00       C    EXPOSURES (SHORT-TERM MODE) ON PATHWAY SEGMENTS THAT ARE LOCATED
      6.            00       C    IN STREET CANYONS
      7.            00       C
      8.            00       C
      9.            00            COMMON/RUNTYP/MODRUN
     10.            00            COMMON/METST/WS,IWD,ISTAB
     11.            00            COMMON/STRT/EXST(5,3,2)
     12.            00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     13.            00            COMMON/PAEMIS/ERATEA(5,20,3),ERATEP(5,20,3),W(5,20)
     14.            00            DIMENSION TT(2)
     15.            00            DUM=3.5*(1./W(IPATH,LINK)+0.5)
     16.            00       C
     17.            00       C    ANNUAL MODE
     18.            00       C    UNITS OF EXPOSURE EXST ARE G/M**2
     19.            00            DO 100 IP=2,2
     20.            00            IF(MODRUN.EQ.2) GO TO 50
     21.            00            EXST(IPATH,IP,1)=EXST(IPATH,IP,1)+DUM*ERATEA(IPATH,LINK,IP)*TT(1)
     22.            00            EXST(IPATH,IP,2)=EXST(IPATH,IP,2)+DUM*ERATEP(IPATH,LINK,IP)*TT(2)
     23.            00            GO TO 100
     24.            00       C
     25.            00       C    SHORT-TERM MODE
     26.            00       C    UNITS OF EXPOSURE EXST ARE G-SEC/M**3
     27.            00        50  EXST(IPATH,IP,1)=EXST(IPATH,IP,1)+DUM*ERATEA(IPATH,LINK,IP)*TT(1)/
     28.            00           1(WS+0.5)
     29.            00        100 CONTINUE
     30.            00            RETURN
     31.            00            END

END ELT.  ERRORS: NONE. TIME:  0.221 SEC. IMAGE COUNT: 31

@HDG,P  ******  TAPEFILE3  ******
```

```
@ELT,L CEM.BEFGEN
ELT 8R1 S74Q1C 04/23/82 15:44:39 (0)
```

*** I01 ***

```
      1.          00          SUBROUTINE BEFGEN(CY)                                                    00080600
      2.          00      C                                                                            00080700
      3.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,        00080700
      4.          00           *              UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                   00092700
      5.          00            COMMON/REGCOM/IREJN                                                    00092800
      6.          00            COMMON/BEFCOM/BEF                                                      00081000
      7.          00            COMMON/BASECM/BASE3R                                                   00081100
      8.          00            COMMON/DELCOM/DEL3R                                                    00081200
      9.          00            COMMON/IDLBCM/IDLB3R                                                   00081300
     10.          00            COMMON/IDLCOM/IDEL3R                                                   00081400
     11.          00            COMMON/IDLCOM/IDLBEF                                                   00081500
     12.          00            COMMON/INDXCM/INDX3R                                                   00081600
     13.          00            COMMON/MYMCOM/MYM,MYR,TF                                               00081700
     14.          00      C                                                                            00081800
     15.          00            REAL BASE3R(10,3,18),DEL3R(10,3,18)                                    00081900
     16.          00            REAL IDLB3R(10,3,18),IDEL3R(10,3,18)
     17.          00            REAL BEF(20,1,18),IDLBEF(20,1,18)
     18.          00            REAL CUMMIL(20,6),MYM(20,6),MYR(20,6),TF(20,6),NONMTH(45,6)            00094200
     19.          00      C                                                                            00082700
     20.          00            INTEGER ALHFLG,TRKFLG,ALTFLG                ,CY,MSFLG,SP3FLG,          00082800
     21.          00           *        NMHFLG,IDLFLG,UNFFLG,MYMRFG,PRTFLG                              00094500
     22.          00            INTEGER INDX3R(30,3,18)
     23.          00            INTEGER MAXAGE(6)                                                      00083100
     24.          00      C                                                                            00083200
     25.          00            DATA MAXAGE/6*19/
     26.          00            DATA NONMTH/                                                           00083700
     27.          00           *            24*.95 , 21*.85 ,                                          00083800
     28.          00           *            24*.95 , 21*.85 ,                                          00083900
     29.          00           *            24*.95 ,  4*.95 , 17*.85 ,                                 00084000
     30.          00           *            24*.95 ,  8*.95 , 13*.85 ,                                 00084100
     31.          00           *            45*.98 ,                                                   00084200
     32.          00           *            45*.95                    /                                00084300
     33.          00      C
     34.          00      C*************************************************************************** 00084400
     35.          00      C                                                                            00084500
     36.          00      C*************************************************************************** 00095600
     37.          00      C                                                                            00095700
     38.          00            CALL GETCUM(CUMMIL)                                                    00095800
     39.          00      C                                                                            00095900
     40.          00      C*************************************************                           00096000
     41.          00      C                                                                            00096100
     42.          00            DO 400 IMODE=1,6                                                       00096200
     43.          00      C                                                                            00086100
     44.          00            MAX = MAXAGE(IMODE)                                                    00086200
     45.          00      C                                                                            00086300
     46.          00            ICY=CY                                                                 00086400
     47.          00            DO 200 IP = 1,3
     48.          00              IMY1=ICY-19                                                          00086600
     49.          00              IMY13=ICY                                                            00086700
     50.          00            ICYP=1                                                                 00086800
     51.          00      C
     52.          00            DO 100 MY = IMY1,IMY13                                                 00087000
     53.          00              IMYP =  MY - 50                                                      00087100
     54.          00      C                                                                            00087200
     55.          00              IAGE=ICY - MY                                                        00087300
     56.          00      C                                                                            00087400
     57.          00            IF(IAGE.GT.MAX) IAGE = MAX                                             00087500
     58.          00      C                                                                            00087600
     59.          00              AGE = IAGE                                                           00087700
     60.          00              IA2=ICY-MY+1                                                         00087800
     61.          00              IA3=21-IA2                                                           00087900
     62.          00      C                                                                            00088000
     63.          00            IF(MY.LT.66) INDX=1                                                    00088100
     64.          00            IF(MY.GE.66) INDX=INDX3R(MY-65,IP,IMODE+(IREJN-1)*6)                   00088200
                                                                                                       00088300
```

```
*** I02 ***
@ELT,L CEM.BLKDAT1                                                    *** I02 ***
ELT 8R1 S74Q1C 04/23/82 15:44:44 (1)
     1.          00            BLOCK DATA
     2.          00            COMMON/META/FREQA(6,16,6),FREQP(6,16,6),WSPD(6)
     3.          00            COMMON/SPREAD/DI[illegible](3,2,2),SEASON(3,12)
     4.          00      C
     5.          00      C     VARIABLE DIURN CONTAINS THE PEAK PERCENTAGES OF ADT BY ROADWAY
     6.          00      C     TYPE, MORNING OR EVENING, AND INBOUND OR OUTBOUND DIRECTIONS.
     7.          00      C     NOTE THAT THE ARRAY IS INDEXED FROM LEFT TO RIGHT; THAT IS, THE
     8.          00      C     FIRST INDEX IS CYCLED, THEN THE SECOND, THEN THE THIRD.
     9.          00      C     HENCE, THE FIRST VALUE IN THE DATA STATEMENT IS FOR A FREEWAY,
    10.          00      C     A.M., INBOUND; THE SECOND IS FOR AN ARTERIAL, A.M., INBOUND.
    11.          00      C     THE FOURTH IS FOR A FREEWAY, P.M., INBOUND; THE FIFTH IS FOR AN
    12.          00      C     ARTERIAL, P.M., INBOUND.  THE SEVENTH IS FOR A FREEWAY, A.M.,
    13.          00      C     OUTBOUND, AND THE TENTH IS FOR A FREEWAY, P.M., OUTBOUND.
    14.          00      C
    15.          01            DATA DIURN/3*8.7,3*7.7,3*8.7,3*7.7/
    16.          01      C     DATA DIURN/17.5,10.3,6.1,5.9,7.9,7.7,4.9,8.6,3.6,18.1,9.9,9.5/
    17.          00            DATA SEASON/.87,.87,.87,.90,.90,.90,.96,.96,.96,.99,.99,
    18.          00           1.99,1.02,1.02,1.02,1.10,1.10,1.10,1.11,1.11,1.11,1.12,1.12,
    19.          00           1.12,1.01,1.01,1.01,1.98,.98,.98,.96,.96,.96,.96,.96,.96/
    20.          00            DATA WSPD/1.0,2.54,4.32,6.86,9.53,10.92/
    21.          00            END

END ELT.  ERRORS: NONE. TIME:  0.215 SEC. IMAGE COUNT: 21

@HDG,P  ******  CCEVAX  ******
```

```
*** I03 ***
                      IF(INTYPE(IPATH,LINK).EQ.1.OR.INTYPE(IPATH,LINK).EQ.3) GO TO 30                                  *** I03 ***
C
C     NON-CBD, FREEWAY, OR EXPRESSWAY SEGMENTS (NO BACKUP)
C
      DO 15 IP=2,2
      ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDAC,IP)*VOLAC+OUTFAC(1,ISPDAO,
     1IP)*VOLAO)/5792400.
   15 ERATEP(IPATH,LINK,IP)=(OUTFAC(2,ISPDPC,IP)*VOLPC+OUTFAC(2,ISPDPO,
     1IP)*VOLPO)/5792400.
      GO TO 500
C
C     CONGESTED FLOW (FREEWAY BACKUP OR TOLL BOOTH)
C
   30 DO 40 IP=2,2
      IF(INTYPE(IPATH,LINK).EQ.1) GO TO 31
C
C     FREEWAY BACKUP
      EXEMA=OUTFAC(1,4,IP)
      EXEMP=OUTFAC(2,4,IP)
      GO TO 33
C
C     TOLL BOOTH
   31 EXEMA=(EMIDLE(IP)*5792400.)/(8.*TOTBAK(IPATH,LINK,1))
      EXEMP=(EMIDLE(IP)*5792400.)/(8.*TOTBAK(IPATH,LINK,2))
   33 ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDAC,IP)*VOLAC+(EXEMA-OUTFAC(
     11,ISPDAC,IP))*TOTBAK(IPATH,LINK,1)*(DISBAK(IPATH,LINK,1)/SEGL)+
     2OUTFAC(1,ISPDAO,IP)*VOLAO)/5792400.
   40 ERATEP(IPATH,LINK,IP)=(OUTFAC(2,ISPDPC,IP)*VOLPC+(EXEMP-OUTFAC(
     12,ISPDPC,IP))*TOTBAK(IPATH,LINK,2)*(DISBAK(IPATH,LINK,2)/SEGL)+
     2OUTFAC(2,ISPDPO,IP)*VOLPO)/5792400.
      GO TO 500
C
C
C     SHORT-TERM MODE
C
C
   50 IF(INTYPE(IPATH,LINK).EQ.1.OR.INTYPE(IPATH,LINK).EQ.3) GO TO 80
C
C     NON-CBD, FREEWAY, OR EXPRESSWAY SEGMENTS (NO BACKUP)
C
      DO 55 IP=2,2
   55 ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDC,IP)*VOLC+OUTFAC(1,ISPDO,IP)
     1*VOLO)/5792400.
      GO TO 500
C
C     CONGESTED FLOW (FREEWAY BACKUP OR TOLL BOOTH)
C
   80 DO 86 IP=2,2
      IF(INTYPE(IPATH,LINK).EQ.1) GO TO 81
C
C     FREEWAY BACKUP
      EXEM=OUTFAC(1,4,IP)
      GO TO 85
C
C     TOLL BOOTH
   81 EXEM=(EMIDLE(IP)*5792400.)/(8.*TOTBAK(IPATH,LINK,1))
   85 ERATEA(IPATH,LINK,IP)=(OUTFAC(1,ISPDC,IP)*VOLC+(EXEM-OUTFAC(1,
     1ISPDC,IP))*TOTBAK(IPATH,LINK,1)*(DISBAK(IPATH,LINK,1)/SEGL)+
     2OUTFAC(1,ISPDO,IP)*VOLO)/5792400.
   86 CONTINUE
      GO TO 500
C
C
C     CBD NON-FREEWAY SEGMENTS (MODAL)
C
C
```

```
      00      C     READ IDLE EMISSION FACTOR FOR CBD PATHWAYS                                    *** I04 ***
      00       1190 DO 1191 IP=2,2
      00       1191 READ(IFILE,1178) EMIDLE(IP)
      00      C
      00      C
      00      C     PRINT INPUT DATA
      00      C
      00      C
      02       1195 WRITE(IWRI,181) (AMHEAD(I),I=1,10),(IDATE(I),I=1,3)
      00        181  FORMAT(1H1,2X,10A2,//,2X,8HDATE IS ,3I2)
      00             IF(NPRINT.EQ.2) GO TO 260
      00             WRITE(IWRI,182) MODRUN,LPATH,LNPATH
      00        182  FORMAT(2X,35HFLAG FOR MODE OF MODEL OPERATION IS
      00           1I2,/,2X,25HPATHWAY EMISSIONS FLAG IS,I2,/,2X,29HNON-PATHWAY EMISSI
      00           2ONS FLAG IS,I2)
      00             WRITE(IWRI,183) NPATHS,NGRID,CONVRT
      00        183  FORMAT(2X,16HNO. OF PATHWAYS ,I2,/,2X,23HNO. OF GRID SQUARES IS ,
      00           1I3,/,2X,25HMAP CONVERSION FACTOR IS ,E10.3,12H MI/MAP UNIT,////)
      00             WRITE(IWRI,2182)
      00       2182 FORMAT(24X,77HFOR SHORT-TERM MODE TRAFFIC DATA FOR MODELED COMMUTE
      00           1 IS LISTED IN AM POSITION,//)
      00             WRITE(IWRI,184)
      00        184  FORMAT(50X,25HBASIC TRAFFIC INFORMATION)
      00             WRITE(IWRI,185)
      00        185  FORMAT(1H-,25X,7HVOLUMES,14X,4HDATA,10X,5HLANES,12X,5HSPEED,17X,
      00           111HCOORDINATES,13X,9HINTERSECT)
      00             WRITE(IWRI,186)
      00        186  FORMAT(1H ,15X,27H-------------------------,1X,9H---------,
      00           11X,19H-----------------,1X,13H-------------,1X,35H-----------
      00           2---------,1X,9H--------)
      00             WRITE(IWRI,187)
      00        187  FORMAT(1H ,52HPATH LINK TYPE IN/AM  OUT/AM IN/PM  OUT/PM FORM SPRD
      00           1 34H IN  OUT  WIDTH CAPCY IN OUT IN OUT,4X,2HX1,7X,2HY1,7X,2HX2,7X,
      00           22HY2,4X,9HTYPE DATA,/)
      00             DO 196 IP=1,NPATHS
      00             NSEGS=NSEG(IP)
      00             DO 195 IS=1,NSEGS
      00             IF(LPATH.EQ.2) GO TO 191
      00             WRITE(IWRI,190) IP,IS,LINTYP(IP,IS),(VOLHR(IP,IS,IM),IM=1,4),
      00            1IVFORM(IP,IS),IVSPRD(IP,IS),(NLANE(IP,IS,IM),IM=1,2),LANWID(IP,IS)
      00            2,LINCAP(IP,IS),(LINSPD(IP,IS,IM),IM=1,4),X1(IP,IS),Y1(IP,IS),
      00            3X2(IP,IS),Y2(IP,IS),INTYPE(IP,IS),INTDAT(IP,IS)
      00        190 FORMAT(1H ,1X,2(I2,3X),I2,1X,4F7.0,2(2X,I2,3X,I2),3X,I2,3X,I4,2(1X
      00           1,I2,2X,I2),4(1X,F8.3),2X,I2,3X,I2)
      00             GO TO 195
      00        191  WRITE (IWRI,192) IP,IS,LINTYP(IP,IS),(VOLHR(IP,IS,IM),IM=1,4),
      00            1IVFORM(IP,IS),IVSPRD(IP,IS),(NLANE(IP,IS,IM),IM=1,2),LANWID(IP,IS)
      00            2,(LINSPD(IP,IS,IM),IM=1,4),X1(IP,IS),Y1(IP,IS),X2(IP,IS),Y2(IP,IS)
      00            3,INTYPE(IP,IS),INTDAT(IP,IS)
      00        192  FORMAT(1H ,1X,2(I2,3X),I2,1X,4F7.3,2(2X,I2,3X,I2),3X,I2,8X,
      00           22(1X,I2,2X,I2),4(1X,F8.3),2X,I2,3X,I2)
      00        195  CONTINUE
      00        196  CONTINUE
      00             IF(NINT.EQ.0) GO TO 210
      00             WRITE(IWRI,2001)
      00       2001 FORMAT(1H1,51X,24HINTERSECTION INFORMATION)
      00             WRITE(IWRI,2002)
      00       2002 FORMAT(1H-,36X,24HSIGNALIZED INTERSECTIONS,35X,15HFREEWAY BACKUPS)
      00             WRITE(IWRI,2003)
      00       2003 FORMAT(1H ,10X,75H-------------------------------------------------
      00           1-------------------------,1X,34H-----------------------------------
      00           2--)
      00             WRITE(IWRI,2004)
      00       2004 FORMAT(1H ,18X,10HCAPACITIES,20X,7HVOLUMES,13X,5HCYCLE,5X,5HGREEN,
      00           15X,7HVOLUMES,4X,10HCAPACITIES,4X,5HTIMES,4X,5HTOLLS)
      00             WRITE(IWRI,2005)
```

```
@ELT,L CEM.MODE
ELT 8R1 S74Q1C 04/23/82 15:45:11 (0)
```

*** I05 ***

```
      1.          00            SUBROUTINE MODE(N,L,M,K9,M9)
      2.          00            COMMON/RUNTYP/MODRUN
      3.          00            COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
      4.          00           1QDIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
      5.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),AGRID
      6.          00            COMMON/GENRL/MHEAD(10),IDATE(2),CONVRT
      7.          00            COMMON/TRAFOT/ VOLHR(5,20,4), INSPD(5,20,4)
      8.          00            COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
      9.          00            COMMON/SIGNAL/R(4),GPH(5,20,4),
     10.          00           1ACAP(5,20,4),ADV(5,20,4)
     11.          00            COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     12.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     13.          00            COMMON/SECOND/IAMPC,IPMPC,IPCWH,RATSEC(5)
     14.          00            COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     15.          00           1LINCAP(5,20),NLANE(5,20,2),LANWID(5,20),IBOUND
     16.          00      C
     17.          00      C
     18.          00      C
     19.          00            IF(M.EQ.1.OR.M.EQ.3) M9=M/2+1
     20.          00            IF(IBOUND.EQ.2) M9=2
     21.          00            IF(LPATH.EQ.1) GO TO 5
     22.          00            LSPEED=5*INT(LINSPD(N,L,M)/5+0.5)
     23.          00            LINSPD(N,L,M)=LSPEED/5
     24.          00            IF(LSPEED.GT.5) GO TO 205
     25.          00            WRITE(6,15)
     26.          00         15 FORMAT(' 1X,98HWARNING.  NON-ZERO SPEED MUST BE INPUT WITH EMISSION
     27.          00           1S.  A VALUE OF 25 MPH IS ASSUMED FOR THIS RUN.)
     28.          00            LINSPD(N,L,M)=5
     29.          00            LSPEED=25
     30.          00            GO TO 205
     31.          00          5 IF(LINSPD(N,L,M).EQ.0.0) LINSPD(N,L,M)=25
     32.          00            LSPEED=LINSPD(N,L,M)
     33.          00            LINSPD(N,L,M)=INT(LINSPD(N,L,M)/5.+0.5)
     34.          00            IF(M.EQ.2.OR.M.EQ.4) GO TO 2000
     35.          00            IF(INTDAT(N,L).EQ.1) GO TO 130
     36.          00            DO 50 K=1,2
     37.          00            R(K)=0.
     38.          00            R(K+2)=0.
     39.          00         50 CONTINUE
     40.          00            NPH=2
     41.          00            SKIP=0.
     42.          00            DO 100 K=1,2
     43.          00            IF(ACAP(N,L,M+K-1).EQ.0.) GO TO 90
     44.          00            R(K)=ADV(N,L,M+K-1)/ACAP(N,L,M+K-1)
     45.          00            IF(R(K).NE.0.) GO TO 100
     46.          00         90 NPH=NPH-1
     47.          00        100 SKIP=SKIP+R(K)
     48.          00            SKIP=1.0-SKIP
     49.          00            IF (SKIP.GT.0.0) GO TO 110
     50.          00            GO TO 310
     51.          00        110 CYCL(N,L,M9)=(9.0*NPH+5.0)/SKIP
     52.          00            CYC=CYCL(N,L,M9)
     53.          00            SKIP=1.-SKIP
     54.          00            DO 125 K=1,2
     55.          00            IF(R(K).EQ.0.) GO TO 125
     56.          00            GPH(N,L,M9)=CYC*R(1)/SKIP-3.
     57.          00        125 CONTINUE
     58.          00        130 CONTINUE
     59.          00            CYC=CYCL(N,L,M9)
     60.          00            DO 150 K=1,2
     61.          00            IF(GPH(N,L,K).GE.0.) GO TO 150
     62.          00      C
     63.          00      C
     64.          00      C
```

```
     65.          00          111H THROUGH 19,I2)                                                                    *** I06 ***
     66.          00     C
     67.          00     C    COME HERE IF NOT FIRST TIME THROUGH
     68.          00     C
     69.          00      20  GO TO (21,31,41,51,61,61,101,101) ILOOP
     70.          00     C
     71.          00     C
     72.          00     C    MODEL IS IN ANNUAL MODE--PRINT AND CREATE FILE OF EMISSION FACTORS
     73.          00     C    FOR NON-CBD PATHWAY VMT
     74.          00     C
     75.          00     C
     76.          00      21  WRITE(IWRI,22)
     77.          00      22  FORMAT(///////,65H  COMPOSITE EMISSION FACTORS (GRAMS/MILE) FOR NO
                              1N-CBD PATHWAY VMT,////)
     78.          00          WRITE(IWRI,23) ITEMPA,ITEMPP,IACAM,IACPM
     79.          00      23  FORMAT(18H  AM TEMPERATURE   I3,4H (F),10X,16HPM TEMPERATURE   I3,
                              14H (F),/,23H  AM AIR CONDITIONING  ,I3,3H PC,6X,21HPM AIR CONDITIO
                              2NING   I3,3H PC)
     80.          00          WRITE(IWRI,24)
     81.          00      24  FORMAT(23H  100 PC WARM OPERATION,//)
     82.          00          DO 29 IP=2,2
     83.          00          WRITE(IWRI,225) (POL(JP,IP),JP=1,5)
     84.          00     225  FORMAT(28X,5A4)
     85.          00          WRITE(IWRI,25)
     86.          00      25  FORMAT(13H  SPEED (MPH),3X,18HAM EMISSION FACTOR,3X,18HPM EMISSION
                             1 FACTOR,/)
     87.          00          DO 26 II=1,11
     88.          00          JSPD=(II+1)*5
     89.          00      26  WRITE(IWRI,27) JSPD,(TOTEM(I,II+1,IP),I=1,2)
     90.          00      27  FORMAT(6X,I3,10X,1PE10.3,11X,E10.3)
     91.          00          WRITE(IFILE,28) ((TOTEM(I1,I2,IP),I2=2,12),I1=1,2)
     92.          00      28  FORMAT(8E12.5)
     93.          00          WRITE(IWRI,229)
     94.          00     229  FORMAT(///)
     95.          00      29  CONTINUE
     96.          00          GO TO 100
     97.          00     C
     98.          00     C
     99.          00     C    MODEL IS IN ANNUAL MODE--PRINT AND CREATE FILE OF EMISSION FACTORS
    100.          00     C    FOR GRIDDED VMT
    101.          00     C
    102.          00     C
    103.          00      31  WRITE(IWRI,32)
    104.          00      32  FORMAT(1H1  ,57H  COMPOSITE EMISSION FACTORS (GRAMS/MILE) FOR GRID
                             1DED VMT,////)
    105.          00          WRITE(IWRI,23) ITEMPA,ITEMPP,IACAM,IACPM
    106.          00          WRITE(IWRI,34)
    107.          00      34  FORMAT(18H  SPEED   19.6 MPH,//)
    108.          00          DO 38 IP=2,2
    109.          00          WRITE(IWRI,39) (POL(JP,IP),JP=1,5)
    110.          00      39  FORMAT(39X,5A4)
    111.          00          WRITE(IWRI,35)
    112.          00      35  FORMAT(14X,18HAM START MODE (PC),26X,18HPM START MODE (PC),/,
                             18H  LOCALE,4X,4HCOLD,5X,4HCOLD,6X,3HHOT,4X,11HAM EMISSION,7X,4HCOL
                             2D,5X,4HCOLD,6X,3HHOT,4X,11HPM EMISSION,/,3X,4HTYPE,3X,8HCATALYST
                             3X,8HNON-CAT,2X,8HCATALYST,4X,6HFACTOR,9X,8HCATALYST,1X,8HNON-CAT
                             4,2X,8HCATALYST,4X,6HFACTOR,/)
    113.          00          DO 36 II=1,5
    114.          00      36  WRITE(IWRI,37) II,(CLDCA(II),JCLDNA(II),JHOTA(II),TOTEM(1,II,IP),
                             1JCLDCP(II),JCLDNP(II),JHOTP(II),TOTEM(2,II,IP)
    115.          00      37  FORMAT(4X,I2,1X,3(6X,I3),5X,1PE10.3,2X,3(6X,I3),5X,E10.3)
    116.          00          WRITE(IFILE,28) ((TOTEM(I1,I2,IP),I2=1,5),I1=1,2)
    117.          00          WRITE(IWRI,229)
    118.          00      38  CONTINUE
    119.          00          GO TO 100
    120.          00     C
```

```
*** I07 ***
@ELT,L CEM.RUNTEST11                                                    *** I07 ***
ELT 8R1 S74Q1C 04/23/82 15:45:21 (Q)
     1.          00     @ASG,CP TEST11.
     2.          00     @@RKPT PRINT$/TEST11
     3.          00     @ASG,CP FILE8.
     4.          00     @USE 8,FILE8.
     5.          00     @XQT CEM.PREPRS
     6.          00     @ADD CEMDATA.TAPEFILE3
     7.          00     @FREE FILE8.
     8.          00     @@RKPT PRINT$
     9.          00     @FREE TEST11.

END ELT.  ERRORS: NONE. TIME:  0.204 SEC. IMAGE COUNT: 9

@HDG,P  ******  RUNTEST18  ******
```

```
*** IO8 ***                                                                    *** IO8 ***
@ELT,L CEM.TAPEFILE3
ELT 8R1 S74Q1C 04/23/82 15:45:28 (0)
 SI IS NOT SIR TYPE SDF *[F▒▒[▒▒▒▒▒▒
     1.          00     1P TEST11                    781215_1_1 1 1 0 0 0
     2.          00     3P   0   0   0 73 73   0   02.5 -2.5
     3.          00     4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
     4.          00     5P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.204 SEC. IMAGE COUNT: 4


@HDG,P  ******  TAPEFILE4  ******
```

```
     65.          00     C                                                                                    00088400
     66.          00     C                                                                                    00088600
     67.          00     C                                                                                    00088700
     68.          00            VMTAGE=CUMMIL(IAGE+1,IMODE)*.0001
     69.          00     C                                                                                    00088900
     70.          00            BEF(IA3,ICYP,IP+(IMODE-1)*3) =
     71.          00           *          BASE3R(INDX,IP,IMODE+(IREJN-1)*6) +                                  00089100
     72.          00           *       VMTAGE*DEL3R(INDX,IP,IMODE+(IREJN-1)*6)                                 00089200
     73.          00            IDLBEF(IA3,ICYP,IP+(IMODE-1)*3) =
     74.          00           *          IDLB3R(INDX,IP,IMODE+(IREJN-1)*6) +                                  00089400
     75.          00           *       VMTAGE*IDEL3R(INDX,IP,IMODE+(IREJN-1)*6)                                00089500
     76.          00     C                                                                                    00089600
     77.          00     100    CONTINUE                                                                      00090500
     78.          00     200    CONTINUE                                                                      00090600
     79.          00     300    CONTINUE                                                                      00090700
     80.          00     400    CONTINUE                                                                      00090800
     81.          00     C                                                                                    00090900
     82.          00     C************************************                                                00091000
     83.          00            J=1
     84.          00            DO 450 I=1,20                                                                 00091200
     85.          00     C
     86.          00            DO 450 IM=1,6                                                                 00091400
     87.          00            IF(NMHFLG.EQ.1)BEF(I,J,1+(IM-1)*3)=BEF(I,J,1+(IM-1)*3)*NONMTH
     88.          00           *(I+J-1,IM)
     89.          00     450    CONTINUE                                                                      00091900
     90.          00
     91.          00     C                                                                                    00092000
     92.          00     C      DEBUG SUBCHK                                                                  00092100
     93.          00     C                                                                                    00092200
     94.          00            RETURN                                                                        00092300
     95.          00            END                                                                           00092400
END ELT.  ERRORS: NONE. TIME:  0.356 SEC. IMAGE COUNT: 95

@HDG,P  ******  BIGCFX  ******
```

```
*** J02 ***
@ELT,L CEM.CCEVAX
ELT 8R1 S74Q1C 04/23/82 15:44:45 (Q)
      1.          00              SUBROUTINE CCEVAX                                                    00097200
      2.          00      C                                                                            00097300
      3.          00              COMMON/CEVCOM/CCEVRT                                                 00097400
      4.          00              COMMON/REGCOM/IREJN                                                  00097500
      5.          00      C                                                                            00097600
      6.          00              INTEGER CY , MY                                                      00097700
      7.          00              REAL CCEV(45,6,3),CCEVRT(45,6)
      8.          00      C       DATA LDGSWD/17*.80,.77,.77,3*.74,2*.72,21*.55/                       00097900
      9.          00      C                                                                            00098000
     10.          00              DATA CCEV/12*6.63,5*3.33,3*2.53,7*1.76,2*0.60,16*0.15,               00098100
     11.          00             *          12*6.63,5*3.33,3*2.53,7*1.76,2*0.60,16*0.15,               00098200
     12.          00             *          17*7.70,11*2.53,1*0.60,16*0.15,                            00098300
     13.          00             *          17*7.70,13*2.00,15*0.30,
     14.          00             *          45*0.                                                      00098500
     15.          00             *          27*1.60,18*0.,
     16.          00             *                                                                     00098700
     17.          00             *          10*6.63,3*3.33,7*2.53,7*1.76,2*0.60,16*0.15,               00098800
     18.          00             *          10*6.63,3*3.33,7*2.53,7*1.76,2*0.60,16*0.15,               00098900
     19.          00             *          17*7.70,10*2.53,2*0.60,16*0.15,                            00099000
     20.          00             *          17*7.70,7*2.00,2*1.19,3*0.87,16*0.30,
     21.          00             *          45*0.                                                      00099200
     22.          00             *          27*1.60,18*0.,
     23.          00             *                                                                     00099400
     24.          00             * 12*9..5*4.52,3*3.44,6*2.39,1*1.76,2*.81,4*.2,12*.15,
     25.          00             * 12*9..5*4.52,3*3.44,6*2.39,1*1.76,2*.81,4*.2,12*.15,
     26.          00             * 17*10.46,9.5.72,2.00,2.72,.81,4*.2,12*.15,
     27.          00             *17*10.46,16*2.72,12*0.30,
     28.          00             *          45*0.                                                      00099900
     29.          00             *          27*2.17,18*0.     /
     30.          00      C                                                                            00100100
     31.          00      C                                                                            00100200
     32.          00              DO 100 IMODE = 1,6                                                   00100300
     33.          00              DO 90 MY = 1,45                                                      00100400
     34.          00      C                                                                            00100500
     35.          00              CCEVRT(MY,IMODE) = CCEV(MY,IMODE,IREJN)                              00100600
     36.          00      C                                                                            00100700
     37.          00      90      CONTINUE                                                             00100800
     38.          00      100     CONTINUE                                                             00100900
     39.          00      C                                                                            00101000
     40.          00      C                                                                            00101100
     41.          00              RETURN                                                               00101200
     42.          00      C       DEBUG SUBCHK                                                         00101300
     43.          00              END                                                                  00101400

END ELT.  ERRORS: NONE. TIME:  0.275 SEC. IMAGE COUNT: 43

@HDG,P  ******  CEMAP  ******
```

```
*** J03 ***                                                                                                    *** J03 ***
   131.          00      100  IF(MODRUN.EQ.2) GO TO 150
   132.          00      C
   133.          00      C
   134.          00      C     ANNUAL MODE
   135.          00      C
   136.          00      C
   137.          00            DO 110 IP=2,2
   138.          00            EXCESA=0.
   139.          00            EXCESP=0.
   140.          00            IF(DISBAK(IPATH,LINK,1).EQ.0.) GO TO 107
   141.          00            EXCESA=(EMAD1(1,IP,ISPDAC)*Q(IPATH,LINK,1)/CYCL(IPATH,LINK,1)+
   142.          00           1EMIDLE(IP)*DEL(IPATH,LINK,1)*VOLAC*P(IPATH,LINK,1)/3600.)/
   143.          00           2DISBAK(IPATH,LINK,1)
   144.          00       107  IF(DISBAK(IPATH,LINK,2).EQ.0.) GO TO 108
   145.          00            EXCESP=(EMAD1(2,IP,ISPDPC)*Q(IPATH,LINK,2)/CYCL(IPATH,LINK,2)+
   146.          00           1EMIDLE(IP)*DEL(IPATH,LINK,2)*VOLPC*P(IPATH,LINK,2)/3600.)/
   147.          00           2DISBAK(IPATH,LINK,2)
   148.          00       108  CRUISA=EMCR1(1,IP,ISPDAC)*VOLAC/(ISPDAC*1609.344)
   149.          00            CRUISP=EMCR1(2,IP,ISPDPC)*VOLPC/(ISPDPC*1609.344)
   150.          00            ERATEA(IPATH,LINK,IP)=((EXCESA*QDIST(IPATH,LINK,1)+CRUISA*SEGL)/
   151.          00           1SEGL)+OUTFAC(1,ISPDAO,IP)*VOLAO /5792400.
   152.          00       110  ERATEP(IPATH,LINK,IP)=((EXCESP*QDIST(IPATH,LINK,2)+CRUISP*SEGL)/
   153.          00           1SEGL)+OUTFAC(2,ISPDPO,IP)*VOLPO /5792400.
   154.          00            GO TO 500
   155.          00      C
   156.          00      C
   157.          00      C     SHORT-TERM MODE
   158.          00      C
   159.          00      C
   160.          00       150  DO 160 IP=2,2
   161.          00            EXCESS=0.
   162.          00            IF(DISBAK(IPATH,LINK,1).EQ.0.) GO TO 157
   163.          00            EXCESS=(EMAD1(1,IP,ISPDC)*Q(IPATH,LINK,1)/CYCL(IPATH,LINK,1)+
   164.          00           1EMIDLE(IP)*DEL(IPATH,LINK,1)*VOLC*P(IPATH,LINK,1)/3600.)/
   165.          00           2DISBAK(IPATH,LINK,1)
   166.          00       157  CRUISE=EMCR1(1,IP,ISPDC)*VOLC/(ISPDC*1609.344)
   167.          00       160  ERATEA(IPATH,LINK,IP)=((EXCESS*QDIST(IPATH,LINK,1)+CRUISE*SEGL)/
   168.          00           1SEGL)+OUTFAC(1,ISPDO,IP)*VOLO/5792400.
   169.          00       500  CONTINUE
   170.          00            RETURN
   171.          00            END

END ELT.  ERRORS: NONE. TIME:  0.392 SEC. IMAGE COUNT: 171

@HDG,P  ******  FREE  ******
```

```
      00        2005 FORMAT(1H ,10X,27H----------1X,27H----------
      00          1----------,1X,9H---------,1X,9H---------,1X,11H----------,1X,
      00          212H----------,1X,9H---------,1X,7H-------)
      00           WRITE(IWRI,2006)
      00        2006 FORMAT(1H ,51HPATH LINK IN/AM  OPPOSE OUT/PM OPPOSE IN/AM  OPPOSE,
      00          157H OUT/PM OPPOSE  IN    OUT  IN    OUT  IN    OUT  IN    OUT,
      00          220H    IN    OUT  IN OUT)
      00           DO 206 IP=1,NPATHS
      00           NSEGS=NSEG(IP)
      00           DO 205 IS=1,NSEGS
      00           IF(INTYPE(IP,IS).EQ.0) GO TO 205
      00           IF(INTYPE(IP,IS).EQ.3) GO TO 201
      00           IF(INTYPE(IP,IS).EQ.1) GO TO 203
      00           WRITE(IWRI,200) IP,IS,(ACAP(IP,IS,IM),IM=1,4),(ADV(IP,IS,IM),IM=1,
      00          14),(CYCL(IP,IS,IM),IM=1,2) (GPM(IP,IS,IM),IM=1,2)
      00        200 FORMAT(1H ,1X,I2,3X,I2,2X,8(F5.0,2X),4(F4.0,1X))
      00           GO TO 205
      00        201 WRITE(IWRI,202) IP,IS,(VOLBAK(IP,IS,IM),IM=1,2),
      00          1(CAPBAK(IP,IS,IM),IM=1,2),(BAKTIM(IP,IS,IM),IM=1,2)
      00        202 FORMAT(1H ,1X,2(I2,3X),7SX,4(F5.0,1X),F4.0,1X,F4.0)
      00           GO TO 205
      00        203 WRITE(IWRI,204) IP,IS,(TOLLS(IP,IS,IM),IM=1,2)
      00        204 FORMAT(1H ,1X,2(I2,3X),110X,F3.0,1X,F3.0)
      00        205  CONTINUE
      00        206  CONTINUE
      00        210  IF(LPATH.EQ.2.AND.LNPATH.EQ.2) GO TO 225
      00             IF(MODRUN.EQ.2) GO TO 215
      00             WRITE(IWRI,211) IAMPC,IPMPC
      00        211  FORMAT(1H1,1X,I3,53H PC OF NON-PATHWAY ADT DURING AVERAGE AM COMMU
      00          1TE HOUR,/,1X,I3,53H PC OF NON-PATHWAY ADT DURING AVERAGE PM COMMUT
      00          2E HOUR,/////)
      00             GO TO 220
      00        215  WRITE(IWRI,216) IPCWH
      00        216  FORMAT(1H1,2X,I3,48H PC OF NON-PATHWAY ADT DURING WORST COMPUTE HO
      00          1UR,/////)
      00        220  IF(LNPATH.EQ.2) GO TO 225
      00             WRITE(IWRI,221)
      00        221  FORMAT(18X,18HRATIO OF SECONDARY,/,2X,11HLOCALE TYPE,7X,14HTO PRIM
      00          1ARY VMT,/)
      00             DO 223 I=1,5
      00        223  WRITE(IWRI,222) I,RATSEC(I)
      00        222  FORMAT(6X,I2,16X,F5.3)
      00        225  WRITE(IWRI,226)
      00        226  FORMAT(1H1,17X,23HGRID SQUARE INFORMATION,///,2X,4HGRID,6X,2HXG,
      00          110X,2HYG,9X,5HGSIZE,7X,4HGVMT,5X,5HIGLOC,4X,5HGEMIS,/)
      00             DO 230 I=1,NGRID
      00             IF(LNPATH.EQ.2) GO TO 228
      00             WRITE(IWRI,227) I,XG(I),YG(I),GSIZE(I),GVMT(I),IGLOC(I)
      00        227  FORMAT(3X,I3,3(2X,F10.3),2X,E10.3,3X,I2)
      00             GO TO 230
      00        228  WRITE(IWRI,229) I,XG(I),YG(I),GSIZE(I),GEMIS(I)
      00        229  FORMAT(3X,I3,3(2X,F10.3),21X,E10.3)
      00        230  CONTINUE
      00             IF(MODRUN.EQ.2) GO TO 250
      00             DO 249 IAMPM=1,2
      00             WRITE(IWRI,235) AMPM(IAMPM)
      00        235  FORMAT(////////,35X,A2,1X,28HJOINT FREQUENCY DISTRIBUTION)
      00             DO 246 IST=1,6
      00             WRITE(IWRI,240) IST
      00        240  FORMAT(////,45X,10HSTABILITY ,I2,///,2X,9HWIND DIR.,32X,16HWIND SP
      00          1EED CLASS,/,4X,5HCLASS,11X,2H 1,10X,2H 2,10X,2H 3,10X,2H 4,10X,2H
      00          25,10X,2H 6,/)
      00             DO 245 IWD=1,16
      00             IF(IAMPM.EQ.2) GO TO 242
      00             WRITE(IWRI,241) IWD,(FREQA(IST,IWD,IWS),IWS=1,6)
      00             GO TO 245
```

*** J04 ***

```
00          WRITE(6,500) N,L,K
00    C
00    C
00    C
00          GPH(N,L,M9)=CYC
00      500 FORMAT( 1X,40HWARNING. NEGATIVE GREEN PHASE ON PATHWAY,I4,6H PHASE
00         1,I4,//,1X,46HPHASE LENGTH SET TO CYCLE LENGTH FOR THIS RUN.)
00      150 CONTINUE
00          IF(GPH(N,L,M9).EQ.0.) GO TO 200
00    C     P IS THE PROPORTION OF VEHICLES THAT STOP.
00          P(N,L,M9)=(1-GPH(N,L,M9)/CYC)/(1-(ADV(N,L,M)/ACAP(N,L,M)))
00    C     C IS THE CAPACITY OF THE APPROACH UNDER SIGNALIZATION.
00          C=ACAP(N,L,M)*GPH(N,L,M9)/CYC
00    C     Q IS THE QUEUE LENGTH FOR EACH SIGNAL CYCLE.
00          QU=P(N,L,M9)*ADV(N,L,M)*CYC/3600.+ADV(N,L,M)/(C-ADV(N,L,M))
00          Q(N,L,M9)=QU
00    C     D IS THE AVERAGE DELAY IN SECONDS FOR ALL VEHICLES.
00          D=0.5*P(N,L,M9)*(CYC-GPH(N,L,M9))+3600.*ADV(N,L,M)/(C*(C-
00         1ADV(N,L,M)))
00          DEL(N,L,M9)=D
00      200 CONTINUE
00      205 EXDIST=CONVRT*SQRT((X1(N,L)-X2(N,L))**2+(Y1(N,L)-Y2(N,L))**2)
00          HALF=EXDIST/2.
00          TT1(N,L,M9)=HALF*60./LSPEED
00          TT2(N,L,M9)=TT1(N,L,M9)
00          IF(LPATH.EQ.2) GO TO 1000
00          QDIS=QU*26.25/5280.
00          QDIST(N,L,M9)=QU*8.
00          ADVOL=ADV(N,L,M)
00          DELAY=DEL(N,L,M9)
00          DELAY=DELAY/60.
00          IF(QDIS.GE.HALF) GO TO 210
00          TT1(N,L,M9)=DELAY+(HALF-QDIS)*60./LSPEED
00          TT2(N,L,M9)=HALF*60./LSPEED
00          GO TO 1000
00      210 IF(QDIS.GE.EXDIST) GO TO 220
00          TT1(N,L,M9)=(HALF/QDIS)*DELAY
00          TT2(N,L,M9)=(EXDIST-QDIS)*60./LSPEED+DELAY*(QDIS-HALF)/QDIS
00          GO TO 1000
00      220 TT1(N,L,M9)=DELAY/2.
00          TT2(N,L,M9)=TT1(N,L,M9)
00          GO TO 1000
00    C
00    C
00    C
00      310 WRITE(6,550) N,L
00      550 FORMAT( 1X,13HERROR ON PATH,I3,5HLINK ,I2,
00         123HDEMAND EXCEEDS CAPACITY)
00     1000 CONTINUE
00          IF(M.EQ.3.OR.IBOUND.EQ.2) GO TO 2000
00          TT3=TT1(N,L,M9)
00          TT1(N,L,M9)=TT2(N,L,M9)
00          TT2(N,L,M9)=TT3
00     2000 CONTINUE
00    C
00    C
00    C
00          RETURN
00          END
```

END ELT. ERRORS: NONE. TIME: 0.317 SEC. IMAGE COUNT: 123

@HDG,P ****** MODMOD ******

*** J05 ***

```
*** J06 ***
  131.          00      C                                                                                    *** J06 ***
  132.          00      C       MODEL IS IN SHORT-TERM MODE--PRINT AND CREATE FILE OF EMISSION
  133.          00      C       FACTORS FOR NON-CBD PATHWAY VMT
  134.          00      C
  135.          00      C
  136.          00       41     WRITE(IWRI,22)
  137.          00              WRITE(IWRI,42) ITEMPS,IACS
  138.          00       42     FORMAT(15H  TEMPERATURE  ,I3,4H (F),/,20H  AIR CONDITIONING  ,I3,
  139.          00             13H PC)
  140.          00              WRITE(IWRI,24)
  141.          00              DO 46 IP=2,2
  142.          00              WRITE(IWRI,47) (POL(JP,IP),JP=1,5)
  143.          00       47     FORMAT(19X,5A4)
  144.          00              WRITE(IWRI,43)
  145.          00       43     FORMAT(13H  SPEED (MPH),6X,15HEMISSION FACTOR,/)
  146.          00              DO 44 II=1,11
  147.          00              JSPD=(II+1)*5
  148.          00       44     WRITE(IWRI,45) JSPD,TOTEM(1,II+1,IP)
  149.          00       45     FORMAT(6X,I3,9X,1PE10.3)
  150.          00              WRITE(IFILE,28) (TOTEM(1,II,IP),II=2,12)
  151.          00              WRITE(IWRI,229)
  152.          00       46     CONTINUE
  153.          00              GO TO 100
  154.          00      C
  155.          00      C
  156.          00      C       MODEL IS IN SHORT-TERM MODE--PRINT AND CREATE FILE OF EMISSION
  157.          00      C       FACTORS FOR GRIDDED VMT
  158.          00      C
  159.          00      C
  160.          00       51     WRITE(IWRI,32)
  161.          00              WRITE(IWRI,42) ITEMPS,IACS
  162.          00              WRITE(IWRI,34)
  163.          00              DO 55 IP=2,2
  164.          00              WRITE(IWRI,56) (POL(JP,IP),JP=1,5)
  165.          00       56     FORMAT(17X,5A4)
  166.          00              WRITE(IWRI,52)
  167.          00       52     FORMAT(16X,15HSTART MODE (PC),/,8H  LOCALE,4X,4HCOLD,5X,4HCOLD,6X,
  168.          00             13HHOT,5X,8HEMISSION,/,4X,4HTYPE,3X,8HCATALYST,1X,8HNON-CAT.,1X,
  169.          00             28HCATALYST,4X,6HFACTOR,/)
  170.          00              DO 53 II=1,5
  171.          00       53     WRITE(IWRI,54) II,JCOLDC(II),JCOLDN(II),JHOT(II),TOTEM(1,II,IP)
  172.          00       54     FORMAT(4X,I2,1X,3(6X,I3),5X,1PE10.3)
  173.          00              WRITE(IFILE,28) (TOTEM(1,II,IP),II=1,5)
  174.          00              WRITE(IWRI,229)
  175.          00       55     CONTINUE
  176.          00              GO TO 100
  177.          00      C
  178.          00      C
  179.          00      C       PRINT TEMPERATURE/COLD STARTS CORRECTION FACTORS FOR CBD PATHWAY
  180.          00      C       MODAL EMISSIONS
  181.          00      C
  182.          00      C
  183.          00       61     WRITE(IWRI,62)
  184.          00       62     FORMAT(////,83H  TEMPERATURE/COLD STARTS CORRECTION FACTORS FOR C
  185.          00             1BD PATHWAY MODAL EMISSION FACTORS,/)
  186.          00              IF(ILOOP.EQ.5) GO TO 63
  187.          00      C       SHORT-TERM MODE
  188.          00              WRITE(IWRI,64) ITEMPS,IACS
  189.          00              GO TO 67
  190.          00      C       ANNUAL MODE
  191.          00       63     WRITE(IWRI,77)
  192.          00              WRITE(IWRI,64) ITEMPP,IACPM
  193.          00       67     WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
  194.          00              DO 660 IP=2,2
  195.          00              IPP=IP
  196.          00              IF(IP.EQ.1) IPP=4
```

```
*** J07 ***
@ELT L CEM.RUNTEST18
ELT 8R1 S7401C 04/23/82 15:45:22 (4)
     1.          02     @RUN 12RHA,6402R0668Z/RHA,CO
     2.          03     @PASSWD KS
     3.          04     @ASG,A TEST18.
     4.          00     @BRKPT PRINT$/TEST18
     5.          00     @ASG,A FILE8.
     6.          00     @USE 8,FILE8.
     7.          00     @XQT CEM.CEMAP
     8.          01     @ADD CEMDATA.TEMPFILE5
     9.          00     @FREE FILE8.
    10.          00     @BRKPT PRINT$
    11.          00     @FREE TEST18.
    12.          02     @FIN

END ELT.  ERRORS: NONE. TIME:  0.205 SEC. IMAGE COUNT: 12

@HDG,P  ******  RUNTEST22  ******
```

```
*** J08 ***
@ELT,L CEM.TAPEFILE4
ELT 8R1 S7491C 04/23/82 15:45:29 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
     1.          00        .10523E+03  .71793E+02  .55383E+02  .44885E+02  .37218E+02  .31698E+02  .28174
     2.          00        .25845E+02  .25169E+02  .22672E+02  .10523E+03  .71793E+02  .55383E+02  .44885
     3.          00        .31698E+02  .28174E+02  .26414E+02  .25845E+02  .25169E+02  .22672E+02
     4.          00        .62309E+02  .62309E+02  .62309E+02  .62309E+02  .62309E+02  .62309E+02  .62309
     5.          00        .62309E+02  .62309E+02
     6.          00        .43407E+00  .87270E+00  .40819E+00  .23420E+01  .36967E+00  .38447E+01  .33552
     7.          00        .31476E+00  .72162E+01  .30921E+00  .94161E+01  .43407E+00  .87270E+00  .40819
     8.          00        .36967E+00  .38447E+01  .33552E+00  .54163E+01  .31476E+00  .72162E+01  .30921
     9.          00        .24127E+02

END ELT.  ERRORS: NONE. TIME:  0.207 SEC. IMAGE COUNT: 9

@HDG,P  ******  TAPEFILE5  ******
```

*** K01 ***

```
      1.          00            SUBROUTINE BIGCFX(CY,T,PCCO,PCHS,PCCC,SPD,CFRET)                                  00047900
      2.          00      C                                                                                        00048000
      3.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,                    00048100
      4.          00           *             UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM                              00057800
      5.          00            COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC
      6.          00            COMMON/REGCOM/IREJN
      7.          00            COMMON/JUNK1/AC,XLOAD,TRAILR,ABSHUM                                                00048400
      8.          00            COMMON/JUNK2/HGWGT,HDWGT,HGCID,HDCID                                               00048500
      9.          00            COMMON/RET1/ALHRET(20,4,3)                                                         00048600
     10.          00            COMMON/RET2/TRKRET(20,3,2)                                                         00048700
     11.          00            COMMON/SP1COM/SP1,SPAV                                                             00048800
     12.          00            COMMON/MYMCOM/MYM,MYR,TF                                                           00058500
     13.          00      C                                                                                        00058600
     14.          00            INTEGER ALHFLG,TRKFLG,ALTFLG,ALTKOD(4,20),CY,SP3FLG,                               00048900
     15.          00           *        NMHFLG,IDLFLG,UNFFLG,MYMRFG,PRTFLG                                         00058800
     16.          00            INTEGER INITFL,IEQNAR(45,3, 12),HDINDX(45,3)                                       00058900
     17.          00            INTEGER   G(45,3,4)                                                                00049200
     18.          00      C IN G, 1ST INDEX IS MY, 2ND IS REGION, AND 3RD IS MODE                                  00049300
     19.          00      C IN IEQNAR, 2ND INDEX IS POLLUTANT, 3RD IS REGION, 4TH IS MODE                          00049400
     20.          00      C IN HDINDX, 2ND INDEX IS REGION (NOT FUNCTION OF POL. OR MODE)                          00049500
     21.          00      C                                                                                        00049600
     22.          00      C                                                                                        00049700
     23.          00            REAL A(20,3,3),U(20,3,3),                                                          00059600
     24.          00      C     *  L(3,3),M(3)                                                                     00049900
     25.          00            REAL XLOAD(3)                                                                      00050000
     26.          00            REAL COMPEF(20,3,6)                                                                00050100
     27.          00            REAL T,SPD(3),SPB(3),CFRET(20,3,6)                                                 00059900
     28.          00            REAL D1(4,3),D2(4,3)                                                               00050300
     29.          00            REAL MIDDLE,LEFT                                                                   00050400
     30.          00            REAL SPBACK(18,3,3),SPBOT(18,3,3)                                                  00050500
     31.          00            REAL ATR(4,3,2),BTR(4,3,2),CTR(4,3,2)                                              00050600
     32.          00            REAL C(4,8,3)                                                                      00050700
     33.          00            REAL CUMMIC(20,6),MYM(20,6),MYR(20,6),TF(20,6)                                     00060500
     34.          00            INTEGER MAXAGE(4)                                                                  00060600
     35.          00      C                                                                                        00060700
     36.          00      C     DATA MAXAGE/19,19,19,19/                                                           00060800
     37.          00      C*****************************************************************************************00050800
     38.          00            DATA INITFL/1/                                                                     00050900
     39.          00      C                                                                                        00051000
     40.          00      C**COEFFICIENTS IN SPEED/TEMP/COLD START FACTOR: EQN,INDEX,POL.                          00051100
     41.          00           *    DATA C/                                                                       00061400
     42.          00           *   2.931000, 2.931000, 2.433900, 1.993400,                                        00061500
     43.          00           *  -0.014779,-0.014779,-0.023591,-0.022268,                                        00061600
     44.          00           *   0.673,-2.410, 0.623,-0.032, 0.569, 0.843, 0.301, 0.445,                        00061700
     45.          00           *   4.750, 5.430, 1.110, 0.492, 0.395, 0.555, 0.284, 0.357,                        00061800
     46.          00           *   5.690, 4.610, 1.050, 0.243, 0.471, 0.597, 0.270, 0.175,                        00061900
     47.          00           *   5.654800, 5.654800, 5.546000, 4.239100,                                        00062000
     48.          00           *  -0.015965,-0.015965,-0.028945,-0.017522,                                        00062100
     49.          00           *  -14.74,-33.89, 11.29, -0.20, 9.62, 9.47,                                        00062200
     50.          00           *    4.24,  6.99, 42.84, 25.26, 15.85,  4.12,                                      00062300
     51.          00           *    5.76,  4.71,  2.34,  2.20, 57.57, 35.90,                                      00062400
     52.          00           *   21.17,  3.96,  9.74,  6.70,  3.13,  2.12,                                      00062500
     53.          00           *  -0.10E+03,-0.10E+03,-0.10E+03,-0.10E+03,                                        00062600
     54.          00           *   0.0  ,  0.0  ,  0.0  ,  0.0  ,  1.140, 1.160,                                  00062700
     55.          00           *   3.260, 3.050, 0.0  ,  0.0  , 0.335, 0.318,                                     00062800
     56.          00           *   1.250, 1.260, 2.990, 2.880, 0.0  , 0.0  ,                                      00062900
     57.          00           *   0.184, 0.180, 0.810, 0.800, 1.890, 2.010,                                      00063000
     58.          00           *   0.0  , 0.0  , 0.116, 0.126  /                                                  00063100
     59.          00      C                                                                                        00063200
     60.          00      C**COEFFICIENTS IN DENOMINATOR OF SPEED/TEMP/COLD START FACTOR                           00063300
     61.          00            DATA D1/5.47,2.8,1.38,54,56.43,36,23,7.98,1.,1.,2.47,2.46/                         00063400
     62.          00            DATA D2/.47,.64,.28,.28,7.59,6.79,3.14,3.14,0.,0.,.18,.18/                         00063500
     63.          00      C                                                                                        00063600
     64.          00      C**SPEED CORRECTION FACTOR INDEX: CAL. YR., REGION, MODE                                 00063700
     65.          00            DATA G/15*2, 2, 2, 4, 5, 6, 7,14,17,17,18,18,18,18*18,                             00063800
```

```
@ELT,L CEM.CEMAP
ELT $R1 S74Q1C 04/23/82 15:44:46 (2)
```

*** K02 ***

```
      1.            00      C     PROGRAM CEMAP (INPUT,OUTPUT,TAPE5=INPUT,TAPE6=OUTPUT,TAPE8)
      2.            00      C
      3.            00      C
      4.            00      C     THIS PROGRAM COMPUTES VARIOUS STATISTICS DESCRIBING THE EXPOSURE
      5.            00      C     OF COMMUTERS TO AIR POLLUTANTS.  IT WILL COMPUTE EXPOSURE ON AN
      6.            00      C     ANNUAL AVERAGE OR SHORT-TERM, WORST-CASE BASIS.
      7.            00      C     THE PROGRAM WAS DESIGNED AND WRITTEN BY P.B. SIMMON AND
      8.            00      C     R.M. PATTERSON AT SRI INTERNATIONAL, MENLO PARK, CA, UNDER THE
      9.            00      C     SPONSORSHIP OF THE ENVIRONMENTAL PROTECTION AGENCY, W.B. PETERSEN,
     10.            00      C     PROJECT OFFICER
     11.            00      C
     12.            00      C
     13.            00            COMMON/RUNTYP/MODRUN
     14.            00            COMMON/OPTION/NOPT1(5),NOPT2(5),NOPT3,NMET(10),IGRAF,JOPT1,JOPT2,
     15.            00           1JOPT3
     16.            00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     17.            00      C
     18.            00      C
     19.            00      C     READ INPUT DATA
     20.            00      C
     21.            00            CALL INDATA
     22.            00      C
     23.            00      C
     24.            00      C     MAKE TRAFFIC COMPUTATIONS
     25.            00            CALL TRAF
     26.            00      C
     27.            00      C
     28.            00      C     MAKE EMISSION RATE COMPUTATIONS FOR PATHWAYS AND FOR NON-PATHWAY
     29.            00      C     SOURCES
     30.            00      C
     31.            00            CALL EMISS
     32.            00            CALL NPATHE
     33.            00      C
     34.            00      C
     35.            00      C     MAKE DISPERSION COMPUTATIONS
     36.            00      C
     37.            00            CALL DISPRS
     38.            00      C
     39.            00      C
     40.            00      C     COMPUTE AND PRINT MODEL OUTPUT STATISTICS
     41.            00      C
     42.            00            IF(MODRUN.EQ.2) GO TO 10
     43.            00      C
     44.            00      C     ANNUAL MODE
     45.            00            CALL STATIS
     46.            00            CALL ANNOUT
     47.            00            GO TO 20
     48.            00      C
     49.            00      C     SHORT-TERM MODE
     50.            00       10   CALL SHORTY
     51.            00      C
     52.            00      C
     53.            00      C     CREATE GRAPHICAL OUTPUT, IF CALLED FOR
     54.            00      C
     55.            00       20   IF(IGRAF.NE.1) GO TO 30
     56.            00            CALL GRAF
     57.            00       30   CONTINUE
     58.            00            END

END ELT.  ERRORS: NONE. TIME:  0.232 SEC. IMAGE COUNT: 58

@HDG,P  ******  COMPILE  ******
```

*** K03 ***

```
      1.          00            SUBROUTINE FREE(N,L,M,K9,M9)
      2.          00        C   THIS SUBROUTINE TREATS FREEWAY TRAFFIC.  VARIABLE IVSPRD ASSUMES
      3.          00        C   VALUES OF -1,0, OR +1 DEPENDING ON WHETHER THE TRAFFIC DATA ARE
      4.          00        C   GIVEN AS ADT, HOURLY VALUES, OR AADT RESPECTIVELY.  FREE COMPUTES
      5.          00        C   HOURLY VOLUMES AND SPEEDS, IF NECESSARY, AND IT COMPUTES TRAVEL
      6.          00        C   DISTANCE, TRAVEL TIME, AND A SPEED CLASS FOR EACH FREEWAY LINK.
      7.          00            COMMON/RUNTYP/MODRUN
      8.          00            COMMON/TRAFEM/ TOTBAK(5,20,2),DISBAK(5,20,2),Q(5,20,2),
      9.          00           1DIST(5,20,2),CYCL(5,20,2),DEL(5,20,2),P(5,20,2)
     10.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     11.          00            COMMON/GENRL/MHEAD(10),IDATE(3),CONVRT
     12.          00            COMMON/TOLL/TOLLS(5,20,2)
     13.          00            COMMON/BAKUP/VOLBAK(5,20,2),CAPBAK(5,20,2),
     14.          00           1BAKTIM(5,20,2)
     15.          00            COMMON/TRAFIN/ LINTYP(5,20),IVSPRD(5,20),LINTOP(5,20),
     16.          00           1LINCAP(5,20),NLANE(5,20),LANWID(5,20),IBOUND
     17.          00            COMMON/TRAFOT/ VOLHR(5,20,4),LINSPD(5,20,4)
     18.          00            COMMON/PACOOR/X1(5,20),X2(5,20),Y1(5,20),Y2(5,20)
     19.          00            COMMON/SPREAD/ DIURN(3,2,2),SEASON(3,12)
     20.          00            COMMON/INFO/INTYPE(5,20),INTDAT(5,20),IVFORM(5,20)
     21.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     22.          00            COMMON/SECOND/IAMPC,IFMPC,IPCWH,RATSEC(5)
     23.          00        C
     24.          00        C
     25.          00        C
     26.          00            LNKDIR=M9
     27.          00            IHOUR=1
     28.          00            IF (M.GE.3.OR.MODRUN.EQ.2.AND.IBOUND.EQ.2) IHOUR=2
     29.          00            ARRIVE=0.
     30.          00            RHO=0.
     31.          00            NBAR=0.
     32.          00            DBAR=0.
     33.          00            QLNGTH=0.
     34.          00            IF(LPATH.EQ.1) GO TO 5
     35.          0C            LSPEED=5*INT(LINSPD(N,L,M)/5.+0.5)
     36.          00            LINSPD(N,L,M)=LSPEED
     37.          00            IF(LSPEED.GT.5) GO TO 50
     38.          00            WRITE(6,15)
     39.          00         15 FORMAT( 1X,98HWARNING.  NON-ZERO SPEED MUST BE INPUT WITH EMISSION
     40.          00           1S.  A VALUE OF 45 MPH IS ASSUMED FOR THIS RUN.)
     41.          00            LINSPD(N,L,M)=45
     42.          00            GO TO 50
     43.          00          5 LNKTYP=LINTYP(N,L)
     44.          00            IF(IVSPRD(N,L)) 10,20,30
     45.          00        C   VOLUMES ARE ADT
     46.          02         10 VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
     47.          00            GO TO 35
     48.          00        C   VOLUMES ARE AADT.
     49.          00         30 IF(MODRUN.EQ.1) GO TO 10
     50.          00            MON=IDATE(2)
     51.          00            VOLHR(N,L,M)=VOLHR(N,L,M)*DIURN(LNKTYP,IHOUR,LNKDIR)/100.0
     52.          00           1*SEASON(LNKTYP,MON)
     53.          00            GO TO 35
     54.          00         20 VOLHR(N,L,M)=VOLHR(N,L,M)
     55.          00         35 IF(IVFORM(N,L).NE.-1) VOLHR(N,L,M)=VOLHR(N,L,M)*NLANE(N,L,M9)
     56.          00        C   VARIABLE LINSPD DENOTES THE SPEED IN MPH ON THE LINK.  A VALUE OF
     57.          00        C   0 IMPLIES THET SPEED IS TO BE CALCULATED.  THIS REQUIRES THAT
     58.          00        C   CAPACITY BE KNOWN.
     59.          00            IF(LINSPD(N,L,M).GT.0) GO TO 50
     60.          00            IF(LINCAP(N,L).GT.0) GO TO 40
     61.          00            LINCAP(N,L)=2000
     62.          00            IF(IVFORM(N,L).NE.-1) LINCAP(N,L)=NLANE(N,L,M9)*2000
     63.          00         40 VC=VOLHR(N,L,M)/LINCAP(N,L)
     64.          00            IF(VC.LE.1.0) GO TO 45
```

```
   461.          00      242  WRITE(IWRI,241) IWD,(FREQP(IST,IWD,IWS),IWS=1,6)
   462.          00      245  CONTINUE
   463.          00      241  FORMAT(6X,I2,6X,6(2X,F10.3))
   464.          00      246  CONTINUE
   465.          00      249  CONTINUE
   466.          00           GO TO 260
   467.          00      250  WRITE(IWRI,251) WS,IWD,ISTAB
   468.          00      251  FORMAT(///,2X,14HWIND SPEED IS ,F5.1,4H MPS,/,2X,18HWIND DIRECTIO
   469.          00     1N IS ,I3,8H DEGREES,/,2X,19HSTABILITY IS CLASS ,I2)
   470.          00      260  CONTINUE
   471.          00           RETURN
   472.          00           END
```

*** K04 ***

END ELT. ERRORS: NONE. TIME: 1.021 SEC. IMAGE COUNT: 472

$HDG,P ****** INITEX ******

```
@ELT,L CEM.MODMOD
ELT 881 574Q1C 04/23/82 15:45:12 (Q)                                                                    *** K05 ***
      1.          00              SUBROUTINE MODMOD(ACCEL,DECEL,CY)
      2.          00              COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
      3.          00             1IACS
      4.          00              COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
      5.          00             1IMSTRG,IMMECH,IABEG,IMEND,ILOC,IDATE(3)
      6.          00              COMMON/PRE6/ILOOP
      7.          00              COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
      8.          00             1WRMCOR(20,6,3),ACFAC(2,20,5)
      9.          00              COMMON/MODEM/EMAD1(2,4,6),EMCR1(2,4,6),EMIDLE(4)
     10.          00              COMMON/MYMCOM/MYM,MYR,TF
     11.          00              DIMENSION EMAD(20,4),X(12),EMCRUZ(20,4),EMADMY(20,4),EMCRMY(20,4),
     12.          00             1FMODY(20)
     13.          00              INTEGER IGROUP(45,3)
     14.          00              INTEGER CY
     15.          00              REAL DETER(18,4),TF(20,6),MYM(20,6),MYR(20,6)
     16.          00              REAL UPDATE(45,3)
     17.          00              REAL BAD(12,4,18)
     18.          00      C       DATA SET IGROUP ASSOCIATES A MODAL MODEL GROUP WITH EACH MODEL
     19.          00      C        YEAR 1951 - 1995 FOR EACH REGION.
     20.          00              DATA IGROUP/
     21.          00             * 17*2,4,3,6,7,16,17,17,21*18,
     22.          00             1 15*2,3,3,4,5,6,14,15,15,21*18,
     23.          00             2 17*1,8,10,11,12,13,13,21*18/
     24.          00      C       DATA SET DETER CONTAINS THE COEFFICIENTS TO DETERIORATE THE MODAL
     25.          00      C       MODEL EMISSION ESTIMATES TO JULY 1975.
     26.          00              DATA DETER/
     27.          00             * 0.303,0.343,0.513,0.515,0.521,0.596,0.740,0.447,0.401,
     28.          00             1 0.470,0.514,0.204,0.163,0.248,0.158,0.260,0.184,-0.047,
     29.          00             2 0.117,0.169,0.421,0.441,0.494,0.558,0.686,0.234,0.203,
     30.          00             3 0.226,0.234,0.099,0.075,0.188,0.113,0.244,0.171,-0.037,
     31.          00             4 17*0.0,-0.009,18*0.0/
     32.          00      C       DATA SET UPDATE PROVIDES FACTORS FOR ESTIMATING MODAL EMISSIONS OF
     33.          00      C       MODEL YEARS LATER THAN 1975, IN THE MODEL YEAR, BY RATIOING THE
     34.          00      C         MODEL YEAR'S FTP EMISSIONS TO 1975 LOW ALTITUDE FTP EMISSIONS.
     35.          00              DATA UPDATE/
     36.          00             * 24*100.,.5*1.0,0.217,15*0.128,
     37.          00             1 24*100.,.6*0.256,15*0.207
     38.          00             3 24*100.,.2*1.970,0.591,2*1.970,0.374,3*0.202,12*0.128/
     39.          00      C       POLLUTANT 1 = HC
     40.          00      C       POLLUTANT 2 = CO
     41.          00      C       POLLUTANT 3 = NOX
     42.          00      C       POLLUTANT 4 = CO2
     43.          00              DATA ((BAD(I,J,1),I=1,12),J=1,4)/
     44.          00             *  0.90408921E-01,-0.43798499E-02, 0.46575181E-02, 0.46570692E-03,
     45.          00             *  0.82166778E-04,-0.11397827E-01,-0.13474836E-02,-0.36643314E-05,
     46.          00             * -0.22224063E-04, 0.30548215E-01,-0.22557352E-03, 0.16962629E-04,
     47.          00             *  0.10210419E+01,-0.46106476E-01, 0.12750413E-01, 0.19804664E-01,
     48.          00             *  0.10487151E-02,-0.15174127E+00, 0.19398060E-01,-0.79518522E-04,
     49.          00             * -0.27256622E-03, 0.13066291E+00,-0.25413286E-02,-0.32060244E-03,
     50.          00             * -0.35480408E-02, 0.58063143E-03,-0.10358056E-03,-0.45612847E-04,
     51.          00             *  0.47222775E-05, 0.21175048E-02,-0.18792011E-03, 0.31765279E-05,
     52.          00             *  0.33967408E-05,-0.30701563E-02,-0.31551067E-03, 0.23013577E-04,
     53.          00             *  0.71484953E+00, 0.15362855E-01, 0.87663889E-01, 0.17464995E-01,
     54.          00             *  0.45786635E-03, 0.13243157E-01, 0.31411450E-02, 0.04506202E-01,
     55.          00             * -0.12923865E-05, 0.86623710E+00, 0.10729667E-01, 0.12485683E-02/
     56.          00              DATA ((BAD(I,J,2),I=1,12),J=1,4)/
     57.          00             *  0.74031651E-01,-0.30712544E-02, 0.60856193E-02, 0.21202014E-03,
     58.          00             *  0.57630212E-04,-0.73382109E-02, 0.88895089E-03,-0.11810798E-05,
     59.          00             * -0.14498754E-04, 0.27507048E-01,-0.28579007E-03, 0.14516227E-04,
     60.          00             *  0.63576120E+00,-0.24510358E-01, 0.43812852E-01, 0.49628541E-02,
     61.          00             *  0.44958130E-03,-0.47973134E-01, 0.61538182E-02, 0.10994070E-04,
     62.          00             * -0.67511965E-04, 0.30338836E+00,-0.27355787E-02, 0.13473761E-03,
     63.          00             *  0.30182119E-02, 0.17176081E-03, 0.53202268E-03, 0.37671579E-03,
     64.          00             *  0.20686188E-04,-0.32121711E-03, 0.16474385E-03, 0.30790188E-05,
```

```
 197.          00            WRITE(IWRI,70) (POL(JP,IPP),JP=1,5)
 198.          00       70   FORMAT(33X,5A4,/)
 199.          00            WRITE(IWRI,66)
 200.          00       64   FORMAT(15H  TEMPERATURE  ,I3,4H (F),/,20H  AIR CONDITIONING  ,I3,
 201.          00      13H PC)
 202.          00       65   FORMAT(15H  COLD STARTS   ,I3,18H PC (NON-CATALYST),5X,I3,14H PC (C
 203.          00      1ATALYST),/,15H  HOT STARTS   ,I3,14H PC (CATALYST)///)
 204.          00       66   FORMAT(13H  VEHICLE AGE,22X,11HSPEED (MPH),/,4X,7H(YEARS),10X,1H5,
 205.          00      17X,2H10,6X,2H15,6X,2H20,6X,2H25,6X,2H30,/)
 206.          00            DO 68 II=1,20
 207.          00            INDEX=21-II
 208.          00       68   WRITE(IWRI,69) II,(RATIO(INDEX,J,IP),J=1,6)
 209.          00       69   FORMAT(6X,I3,7X,6(2X,F6.3))
 210.          00            WRITE(IWRI,229)
 211.          00      660   CONTINUE
 212.          00      C
 213.          00      C
 214.          00      C     PRINT FACTORS THAT CORRECT MODAL LDV EMISSIONS TO COMPOSITE
 215.          00      C     EMISSIONS FOR CBD PATHWAYS
 216.          00      C
 217.          00      C
 218.          00       71   WRITE(IWRI,72)
 219.          00       72   FORMAT(1H1,  91H  RATIO OF FTP COMPOSITE TO LDV EMISSION FACTORS F
 220.          00      10R CORRECTING MODAL CBD PATHWAY EMISSIONS,/////)
 221.          00            IF(ILOOP.EQ.6) GO TO 80
 222.          00      C
 223.          00      C     MODEL IS IN ANNUAL MODE
 224.          00      C
 225.          00            WRITE(IWRI,73)
 226.          00       73   FORMAT(//,23X,15HMORNING COMMUTE)
 227.          00            WRITE(IWRI,64) ITEMPA,IACAM
 228.          00            WRITE(IWRI,65) IICS,IICS,IICH
 229.          00            DO 79 IP=2,2
 230.          00            IPP=IP
 231.          00            IF(IP.EQ.1) IPP=4
 232.          00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
 233.          00            WRITE(IWRI,74)
 234.          00       74   FORMAT(13H  SPEED (MPH),11X,5HRATIO,/)
 235.          00            DO 75 IS=1,6
 236.          00            JSPD=IS*5
 237.          00       75   WRITE(IWRI,76) JSPD,RATEM(1,IS,IP)
 238.          00       76   FORMAT(6X,I3,14X,F7.3)
 239.          00       79   CONTINUE
 240.          00            WRITE(IWRI,77)
 241.          00       77   FORMAT(////,23X,15HEVENING COMMUTE)
 242.          00            WRITE(IWRI,64) ITEMPP,IACPM
 243.          00            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
 244.          00            DO 779 IP=2,2
 245.          00            IPP=IP
 246.          00            IF(IP.EQ.1) IPP=4
 247.          00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
 248.          00            WRITE(IWRI,74)
 249.          00            DO 78 IS=1,6
 250.          00            JSPD=IS*5
 251.          00       78   WRITE(IWRI,76) JSPD,RATEM(2,IS,IP)
 252.          00            WRITE(IWRI,229)
 253.          00      779   CONTINUE
 254.          00            GO TO 82
 255.          00      C
 256.          00      C     MODEL IS IN SHORT-TERM MODE
 257.          00      C
 258.          00       80   WRITE(IWRI,64) ITEMPS,IACS
 259.          00            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
 260.          00            DO 881 IP=2,2
 261.          00            IPP=IP
 262.          00            IF(IP.EQ.1) IPP=4
```

*** K06 ***

```
*** K07 ***
@ELT,L CEM.RUNTEST22                                                    *** K07 ***
ELT 8R1 S7491C 04/23/82 15:45:23 (3)
     1.          03     @ASG,A TEST22.
     2.          00     @BRKPT PRINT$/TEST22
     3.          00     @ASG,A FILE8A.
     4.          00     @USE 8,FILE8A.
     5.          00     @XQT CEM.CEMAP
     6.          03     @ADD CEMDATA.TEMPFILE8
     7.          01     @FREE FILE8A.
     8.          01     @BRKPT PRINT$
     9.          01     @FREE TEST22.

END ELT.  ERRORS: NONE. TIME:  0.207 SEC. IMAGE COUNT: 9

@HDG,P  ******  RUNTEST6  ******
```

```
*** K08 ***                                                                                                    *** K08 ***
@ELT,L CEM.TAPEFILES
ELT 6R1 S74Q1C 04/23/82 15:45:30 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
    1.          00      1M  TEST 18            781215 1 1 1 1
    2.          00      2M  2 3 3         2.00018939
    3.          00      3M  1 111 1500. 1200. 1000. 1200. 1 0    02214 0 0 0 0    1. 1.     2000. 2000.01
    4.          00      3M  1 211 1500. 1200. 1000. 1200. 1 0    02214 0 0 0 0 2000.2000.  8000. 8000.12
    5.          00      3M  1 311 1500. 1200. 1000. 1200. 1 0    02214 0 0 0 0 4000.4000.  8000. 8000.32
    6.          00      3M  2 112 1000.  800.  500.  800. 1 0    02212 0 0 0 0    1. 1.     2000. 2000.01
    7.          00      3M  2 223  500.  400.  300.  400. 1 0    02212 0 0 0 0    1. 1.     2000. 2000.22
    8.          00      3M  2 323  500.  400.  300.  400. 1 0    02212 0 0 0 0    1. 1.     2000. 2000.21
    9.          00      4M  1 2  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0.  0.  0.  0.  0.0.0.6.6.
   10.          00      4M  1 3  0.  0.  0.  0.  0.  0.  0.  0. 0. 0. 0. 0.15001200100010001 5150.0.
   11.          00      4M  2 2500.400.400.300.1500150015001500 0. 0. 0. 0.  0.  0.  0.  0.0.0.0.0.
   12.          00      4M  2 3500.400.400.300.150015001500150060.60.30.30.  0.  0.  0.  0.0.0.0.0.
   13.          00      5M     1     1     1     1
   14.          00      6M  10 101.    .2    .2     .2    .2     .2
   15.          00      7M   11.0        1.0          6562.       100000.    1
   16.          00      7M   26563.      6563.        3281.       100000.    1
   17.          00
   18.          00
   19.          00
   20.          00
   21.          00
   22.          00
   23.          00
   24.          00
   25.          00
   26.          00
   27.          00
   28.          00
   29.          00
   30.          00
   31.          00
   32.          00
   33.          00
   34.          00
   35.          00
   36.          00
   37.          00
   38.          00
   39.          00
   40.          00
   41.          00
   42.          00
   43.          00
   44.          00
   45.          00
   46.          00
   47.          00
   48.          00
   49.          00
   50.          00
   51.          00
   52.          00
   53.          00
   54.          00
   55.          00
   56.          00
   57.          00
   58.          00
   59.          00
   60.          00
   61.          00
   62.          00
   63.          00
```

0.5

```
*** L01 ***
    65.          00          *       15*2, 3, 3, 4, 5, 6, 7,13,16,16,18,18,18,18*18,                                  00063900
    66.          00          *       15*1, 1, 1, 8, 9,10,11,12,15,15,18,18,18,18*18,                                  00064000
    67.          00          *                                                                                        00064100
    68.          00          *       15*2, 2, 2, 4, 5, 6, 7,14,17,17,18,18,18,18*18,                                  00064200
    69.          00          *       15*2, 2, 2, 4, 5, 6, 7,13,16,16,18,18,18,18*18,                                  00064300
    70.          00          *       15*1, 1, 1, 8, 9,10,11,12,15,15,18,18,18,18*18,                                  00064400
    71.          00          *                                                                                        00064500
    72.          00          *       28*14,17*18,                                                                     00064600
    73.          00          *       27*13,18*18,                                                                     00064700
    74.          00          *       28*12,17*18,                                                                     00064800
    75.          00          *                                                                                        00064900
    76.          00          *       15*2, 2, 2, 3, 2, 2, 2, 2, 2, 3, 2, 2, 2, 2,18*17,                               00065000
    77.          00          *       15*2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,18*16,                               00065100
    78.          00          *       15*1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,18*15 /                              00065200
    79.          00      C                                                                                            00065300
    80.          00            DATA IEQNAR/17*1,7*2,5*3,16*4,  17*1,7*2,5*3,16*4,                                     00065400
    81.          00          *              17*1,7*2,2*3,19*4,  15*1,9*2,    21*4,                                   00065500
    82.          00          *              15*1,9*2,    21*4,  15*1,9*2,    21*4,                                   00065600
    83.          00          *              17*1,7*2,5*3,16*4,  17*1,7*2,5*3,16*4,                                     00065700
    84.          00          *              17*1,7*2,2*3,19*4,                                                         00065800
    85.          00          *              17*1,7*2,21*3,      17*1,7*2,21*3,                                         00065900
    86.          00          *              17*1,7*2,21*3,      17*1,7*2,    21*4,                                     00066000
    87.          00          *              17*1,7*2,    21*4,  17*1,7*2,    21*4,                                     00066100
    88.          00          *              17*1,7*2,21*3,      17*1,7*2,21*3,                                         00066200
    89.          00          *              17*1,7*2,21*3,                                                             00066300
    90.          00          *              28*2,17*3,          28*2,17*3,                                             00066400
    91.          00          *              28*2,17*3,          27*2,18*4,                                             00066500
    92.          00          *              27*2,18*4,          27*2,18*4,                                             00066600
    93.          00          *              28*2,17*3,          28*2,17*3,                                             00066700
    94.          00          *              28*2,17*3,                                                                 00066800
    95.          00          *              27*1,18*2,27*1,18*2,27*1,18*2,                                             00066900
    96.          00          *              27*1,18*2,27*1,18*2,27*1,18*2,                                             00067000
    97.          00          *              27*1,18*2,27*1,18*2,27*1,18*2  /                                           00067100
    98.          00      C                                                                                            00067200
    99.          00            DATA HDINDX/19*1,4*2,5*3,17*4,                                                         00067300
   100.          00          *              19*1,4*2,1*3,21*4,                                                         00067400
   101.          00          *              19*1,4*2,5*3,17*4   /                                                      00067500
   102.          00      C                                                                                            00067600
   103.          00      C                                                                                            00067700
   104.          00      C*****************************************************************************************00067800
   105.          00      C                                                                                            00067900
   106.          00            IF(INITFL.NE.1) GO TO 177                                                              00068000
   107.          00      C  HERE 1ST TIME                                                                             00068100
   108.          00            INITFL = 0                                                                             00068200
   109.          00            SPB(1) = 26.0                                                                          00068300
   110.          00            SPB(2) = 16.0                                                                          00068400
   111.          00            SPB(3) = 26.0                                                                          00068500
   112.          00            CALL SPFCLX(SPB,SPBOT)                                                                 00068600
   113.          00      C                                                                                            00068700
   114.          00      C                                                                                            00068800
   115.          00            CALL GETCUM(CUMMIL)                                                                    00068900
   116.          00      C                                                                                            00069000
   117.          00      C                                                                                            00069100
   118.          00      C*****************************************************************************************00069200
   119.          00      C                                                                                            00059300
   120.          00      177   CONTINUE                                                                               00058500
   121.          00      C                                                                                            00058600
   122.          00      C*****************************************************************************************00053700
   123.          00      C                                                                                            00058800
   124.          00            CALL SPFCLX(SPD,SPBACK)                                                                00058900
   125.          00      C                                                                                            00059000
   126.          00      C                                                                                            00059100
   127.          00            IF(ALHFLG.EQ.1) CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)                         00059200
   128.          00      C                                                                                            00059300
   129.          00      C*****************************************************************************************00059400
   130.          00      C                                                                                            00059500
```

*** L01 ***

```
*** L02 ***
@ELT,L CEM.COMPILE                                                    *** L02 ***
ELT 8R1 S7491C 04/23/82 15:44:47 (4)
      1.          01    @FTN CEM.PREPRS
      2.          01    @FTN CEM.FTP
      3.          01    @FTN CEM.CORFAC
      4.          01    @FTN CEM.MODMOD
      5.          02    @FTN CEM.MOBLE1
      6.          01    @FTN CEM.OUTPUT
      7.          01    @FTN CEM.INPUT
      8.          01    @FTN CEM.EFCALX
      9.          01    @FTN CEM.BIGCFX
     10.          01    @FTN CEM.TRKOPC
     11.          01    @FTN CEM.SPFCLX
     12.          01    @FTN CEM.INITEX
     13.          01    @FTN CEM.TFCALX
     14.          01    @FTN CEM.EFALTX
     15.          01    @FTN CEM.GETCUM
     16.          01    @FTN CEM.BEFGEN
     17.          01    @FTN CEM.ALUH
     18.          01    @FTN CEM.CCEVAX
     19.          01    @FTN CEM.LDVIMX
     20.          01    @FTN CEM.BLKDAT
     21.          01    @FTN CEM.CEMAP
     22.          01    @FTN CEM.INDATA
     23.          01    @FTN CEM.TRAF
     24.          01    @FTN CEM.FREE
     25.          01    @FTN CEM.ART
     26.          01    @FTN CEM.MODE
     27.          01    @FTN CEM.EMISS
     28.          01    @FTN CEM.NPATHE
     29.          01    @FTN CEM.DISPRS
     30.          01    @FTN CEM.STREET
     31.          01    @FTN CEM.ROAD
     32.          01    @FTN CEM.NPATHD
     33.          01    @FTN CEM.SHORTY
     34.          01    @FTN CEM.STATIS
     35.          01    @FTN CEM.ANNOUT
     36.          01    @FTN CEM.BLKDAT1
     37.          04    @FTN CEM.GRAF
     38.          03    @END

END ELT.  ERRORS: NONE. TIME:  0.263 SEC. IMAGE COUNT: 38

@HDG,P  ******  CORFAC  ******
```

```
      C                                                                      *** L03 ***
      C
      C
            WRITE(6,100) N,L

      C
      C
      C
  100 FORMAT( 1X,25HWARNING. ********** ,/,1X,44H VOLUME IS GREATER
     1THAN CAPACITY ON PATHWAY ,I3,7H, LINK ,I3,1H, ,/,1X,68H VOLUME IS B
     2EING SET EQUAL TO CAPACITY FOR THIS RUN.  CHECK INPUTS..)
            VOLHR(N,L,M)=LINCAP(N,L)-1.0
            GO TO 40
   45 SPEED=60.0-25.0*VC-EXP(26.70*VC-24.45)
            LSPEED=5*INT(SPEED/5.+0.5)
            LINSPD(N,L,M)=LSPEED
   50 EXDIST=CONVRT*SQRT((X1(N,L)-X2(N,L))**2+(Y1(N,L)-Y2(N,L))**2)
            HALF=EXDIST/2.
            LSPEED=LINSPD(N,L,M)
            LINSPD(N,L,M)=LINSPD(N,L,M)/5-1
            IF(K9.EQ.0) GO TO 2000
            TT1(N,L,M9)=HALF*60./LSPEED
            TT2(N,L,M9)=TT1(N,L,M9)
            IF(INTYPE(N,L).EQ.0.OR.LPATH.EQ.2) GO TO 1000
            IF(INTYPE(N,L).EQ.1) GO TO 200
            IF(INTYPE(N,L).EQ.3) GO TO 300
  200 ARRIVE=VOLHR(N,L,M)/(TOLLS(N,L,M9)*60.)
            SERVIC=10.
            RHO=ARRIVE/SERVIC
            NBAR=INT(RHO/(1-RHO)+0.5)
            TOTBAK(N,L,M9)=NBAR
            DBAR=1./(SERVIC-ARRIVE)
            QLNGTH=(NBAR/TOLLS(N,L,M9))*(26.25/5280.)
            DISBAK(N,L,M9)=QLNGTH
            QEXTIM=DBAR
            QEXDIS=QLNGTH
            IF(QLNGTH.GE.HALF) GO TO 210
            TT1(N,L,M9)=TT1(N,L,M9)+DBAR-QLNGTH*60./LSPEED
            GO TO 1000
  210 IF(QLNGTH.GE.EXDIST) GO TO 220
            TT1(N,L,M9)=(HALF/QLNGTH)*DBAR
            TT2(N,L,M9)=TT2(N,L,M9)-(QLNGTH-HALF)*60./LSPEED+
           1DBAR*(QLNGTH-HALF)/QLNGTH
            GO TO 1000
  220 TT1(N,L,M9)=DBAR/2.
            TT2(N,L,M9)=TT1(N,L,M9)
            GO TO 1000
  300 QUEBAK=((VOLBAK(N,L,M9)-CAPBAK(N,L,M9))/60.)*BAKTIM(N,L,M9)
            TOTBAK(N,L,M9)=QUEBAK/(1-(VOLHR(N,L,M)/LINCAP(N,L)))
            THEAD=1./60.
            DELBAK=THEAD*QUEBAK**2/TOTBAK(N,L,M9)
            DISBAK(N,L,M9)=DELBAK*20./60.
            IF(DISBAK(N,L,M9).GE.HALF) GO TO 310
            TT1(N,L,M9)=TT1(N,L,M9)+DELBAK-DISBAK(N,L,M9)*60./LSPEED
            GO TO 1000
  310 IF(DISBAK(N,L,M9).GE.EXDIST) GO TO 320
            TT1(N,L,M9)=(HALF/DISBAK(N,L,M9))*DELBAK
            TT2(N,L,M9)=TT2(N,L,M9)-(DISBAK(N,L,M9)-HALF)*60./LSPEED+DELBAK
           1*(DISBAK(N,L,M9)-HALF)/DISBAK(N,L,M9)
            GO TO 1000
  320 TT1(N,L,M9)=DELBAK/2.
            TT2(N,L,M9)=TT1(N,L,M9)
 1000 CONTINUE
            IF(M.EQ.2.OR.M.EQ.4) GO TO 2000
            TT3=TT1(N,L,M9)
            TT1(N,L,M9)=TT2(N,L,M9)
            TT2(N,L,M9)=TT3
```

```
*** L04 ***
@ELT,L CEM.INITEX                                                                                    *** L04 ***
ELT 8R1 S74Q1C 04/23/82 15:44:59 (0)
     1.          00          SUBROUTINE INITEX(CY)
     2.          00     C
     3.          00          COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,                00075100
     4.          00         *     UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM
     5.          00          INTEGER ALTFLG,ALHFLG,TRKFLG,SP3FLG,UNFFLG,PRTFLG
     6.          00          INTEGER CY
     7.          00     C
     8.          00          IF(ALTFLG.EQ.1) CALL EFALTX                                                 00075400
     9.          00     C
    10.          00          CALL BEFGEN(CY)
    11.          00     C                                                                               00075500
    12.          00          CALL CCEVAX                                                                 00075600
    13.          00     C                                                                               00075700
    14.          00     C                                                                               00075800
    15.          00     C                                                                               00076000
    16.          00          RETURN                                                                      00076100
    17.          00     C                                                                               00076200
    18.          00          END                                                                         00076300
                                                                                                         00076400
END ELT.  ERRORS: NONE. TIME:  0.211 SEC. IMAGE COUNT: 18

@HDG,P  ******  INPUT  ******
```

```
      65.          00          * -0.23820230E-05, 0.35156019E-02,-0.47130720E-03, 0.32509648E-04,
      66.          00          *  0.12663460E+01,-0.24310540E-01, 0.10674191E+00,-0.33634792E-01,
      67.          00          *  0.82991435E-03,-0.30546652E-02, 0.77637769E-02,-0.10368174E-01,
      68.          00          * -0.32426819E-04, 0.90210754E+00,-0.12757938E-01, 0.13337550E-027
      69.          00           DATA ((BAD(I,J,3),I=1,12),J=1,4)/
      70.          00          *  0.27212832E-01,-0.3845423 9E-03, 0.23166770E-02, 0.44772075E-03,
      71.          00          *  0.15004828E-04,-0.76230941E-03, 0.21233164E-03,-0.50537274E-05,
      72.          00          * -0.34107507E-05, 0.18768396E-01,-0.22212604E-03, 0.27737669E-05,
      73.          00          *  0.28043038E+00,-0.47583580E-02, 0.43524541E-01,-0.13808063E-02,
      74.          00          *  0.10754808E-03,-0.21531656E-02, 0.93090301E-03, 0.11250070E-04,
      75.          00          * -0.19257051E-05, 0.22921783E+00,-0.40214434E-02, 0.12248126E-03,
      76.          00          *  0.96173792E-02,-0.60726982E-03,-0.16718925E-03, 0.62551862E-03,
      77.          00          *  0.33326345E-04,-0.28037534E-02, 0.48555480E-03,-0.29296501E-06,
      78.          00          * -0.81203279E-05, 0.31921377E-02,-0.45137736E-03, 0.30037307E-04,
      79.          00          *  0.19142990E+01,-0.18390398E-01, 0.18897372E+00, 0.23611151E-01,
      80.          00          *  0.11208029E-02,-0.65214396E-01, 0.14079195E-01, 0.18680211E-03,
      81.          00          * -0.16246944E-03, 0.12807140E+01,-0.27259979E-01, 0.10226872E-027
      82.          00           DATA ((BAD(I,J,4),I=1,12),J=1,4)/
      83.          00          *  0.47496643E-01,-0.19568507E-02, 0.40773861E-02, 0.41705192E-04,
      84.          00          *  0.35876787E-04,-0.48935749E-02, 0.59369067E-03,-0.25508832E-07,
      85.          00          * -0.92721875E-05, 0.21479022E-01,-0.22617164E-03, 0.71491559E-05,
      86.          00          *  0.49613750E+00,-0.14627926E-01, 0.61504323E-01,-0.10729437E-02,
      87.          00          *  0.21254545E-03,-0.68023652E-02, 0.97647379E-03, 0.10525878E-03,
      88.          00          *  0.37405029E-04, 0.26291054E+00,-0.18189936E-02, 0.84008745E-04,
      89.          00          *  0.56772530E-02, 0.13870535E-03,-0.20740409E-02, 0.91203256E-03,
      90.          00          *  0.27594753E-04,-0.23685503E-02, 0.46662986E-03,-0.32384451E-05,
      91.          00          * -0.79489128E-05, 0.46557412E-02,-0.56421268E-03, 0.36217214E-04,
      92.          00          *  0.15495939E+01,-0.22769805E-01, 0.10090774E+00, 0.39233319E-01,
      93.          00          *  0.92311646E-03,-0.23605488E-01, 0.11956014E-01, 0.83194202E-04,
      94.          00          * -0.94420056E-04, 0.12810173E+01,-0.64555928E-02, 0.13930460E-027
      95.          00           DATA ((BAD(I,J,5),I=1,12),J=1,4)/
      96.          00          *  0.48391886E-01,-0.20854892E-02, 0.25164301E-02, 0.13065564E-03,
      97.          00          *  0.36623620E-04,-0.58513656E-02, 0.63295263E-03,-0.47845251E-07,
      98.          00          * -0.93267872E-05, 0.19670408E-01,-0.24843038E-03, 0.80316249E-05,
      99.          00          *  0.50066710E+00,-0.17586585E-01, 0.59330337E-01,-0.18133572E-02,
     100.          00          *  0.22920808E-03,-0.12368988E-01, 0.11492474E-02, 0.74215845E-04,
     101.          00          *  0.14108437E-04, 0.30531263E+00,-0.70244968E-02, 0.10785337E-03,
     102.          00          *  0.61012730E-02, 0.51880744E-03,-0.49174391E-03,-0.15498158E-02,
     103.          00          *  0.28336726E-04,-0.32206392E-02, 0.62561315E-03,-0.10417734E-04,
     104.          00          * -0.10286674E-04, 0.49542226E-02,-0.69028046E-03, 0.46556132E-04,
     105.          00          *  0.20011082E+01,-0.54947240E-03, 0.82746744E-01, 0.42140689E-01,
     106.          00          *  0.13168864E-02,-0.12974644E+00, 0.21255631E-01, 0.10462193E-03,
     107.          00          * -0.23740107E-03, 0.13393688E+01,-0.81634559E-02, 0.14972652E-027
     108.          00           DATA ((BAD(I,J,6),I=1,12),J=1,4)/
     109.          00          *  0.26139319E-01,-0.8818 4210E-03, 0.29786373E-02, 0.52868199E-05,
     110.          00          *  0.18847655E-04,-0.19127505E-02, 0.25880150E-03, 0.16556996E-05,
     111.          00          * -0.31857508E-05, 0.12145314E-01,-0.11148876E-03, 0.68698928E-05,
     112.          00          *  0.39664203E+00,-0.13213880E-01, 0.58552373E-01,-0.19716325E-02,
     113.          00          *  0.16135792E-03,-0.43251887E-02, 0.21358313E-03, 0.86380664E-04,
     114.          00          *  0.40023765E-04, 0.24617422E+00,-0.68550445E-02, 0.10254829E-03,
     115.          00          *  0.73497772E-02,-0.97057258E-03,-0.29075867E-03, 0.10940074E-02,
     116.          00          *  0.39705279E-04, 0.59858408E-02,-0.68858010E-03,-0.37897062E-05,
     117.          00          * -0.11930029E-04, 0.59034862E-02,-0.77449786E-03, 0.47747875E-04,
     118.          00          *  0.22407360E+01,-0.36619877E-02, 0.15603191E+00, 0.43905631E-01,
     119.          00          *  0.12329484E-02,-0.99865854E-01, 0.18429601E-01,-0.37075606E-05,
     120.          00          * -0.19611655E-03, 0.14161215E+01,-0.12227114E-01, 0.13750154E-027
     121.          00           DATA ((BAD(I,J,7),I=1,12),J=1,4)/
     122.          00          *  0.22663523E-01,-0.80241775E-03, 0.20660437E-02, 0.71488132E-04,
     123.          00          *  0.16468533E-04,-0.15534335E-02, 0.21698159E-03, 0.52437150E-06,
     124.          00          * -0.24381525E-05, 0.10398161E-01,-0.82791143E-04, 0.51495617E-05,
     125.          00          *  0.36676234E+00,-0.14121491E-01, 0.68226576E-01,-0.32857144E-02,
     126.          00          *  0.18291990E-03,-0.22933292E-02, 0.19526284E-04, 0.13627447E-03,
     127.          00          *  0.54617223E-04, 0.22517568E+00,-0.46133995E-02, 0.69841262E-04,
     128.          00          *  0.12388222E-01,-0.60462067E-03,-0.30205799E-02, 0.99574262E-03,
     129.          00          *  0.45765060E-04,-0.48322640E-02, 0.74534793E-03,-0.28292980E-05,
     130.          00          * -0.13106739E-04, 0.62181614E-02,-0.74182870E-03, 0.43711843E-04,
```

*** L05 ***

```
      00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
      00            WRITE(IWRI,74)
      00            DO 81 IS=1,6
      00            JSPD=IS+5
      00     81     WRITE(IWRI,76) JSPD,RATEM(1,IS,IP)
      00            WRITE(IWRI,229)
      00    881     CONTINUE
      00      C
      00      C
      00      C     PRINT CORRECTION FACTORS FOR AIR CONDITIONING FOR CBD PATHWAY
      00      C     EMISSIONS (MODAL)
      00      C
      00      C
      00     82     WRITE(IWRI,83)
      00     83     FORMAT(1H1  ,76H  AIR CONDITIONING CORRECTION FACTORS FOR CBD PATH
      00           1WAY MODAL EMISSION FACTORS,/)
      00            IF(ILOOP.EQ.6) GO TO 90
      00      C
      00      C     MODEL IS IN ANNUAL MODE
      00      C
      00            WRITE(IWRI,84) IACAM,IACPM
      00     84     FORMAT(18H  AIR CONDITIONING,5X,4HAM  ,I3,3H PC,5X,4HPM  ,I3,
      00           13H PC,//)
      00            DO 89 IP=2,2
      00            IPP=IP
      00            IF(IP.EQ.1) IPP=4
      00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
      00            WRITE(IWRI,85)
      00     85     FORMAT(13H  VEHICLE AGE,5X,17HCORRECTION FACTOR)
      00     86     FORMAT(4X,7H(YEARS),9X,2HAM,9X,2HPM,/)
      00            WRITE(IWRI,86)
      00            DO 87 II=1,20
      00     87     WRITE(IWRI,88) II,(ACFAC(J,II,   IP),J=1,2)
      00     88     FORMAT(6X,I3,4X,2(5X,F6.3))
      00            WRITE(IWRI,229)
      00     89     CONTINUE
      00            GO TO 100
      00      C
      00      C     MODEL IS IN SHORT-TERM MODE
      00      C
      00     90     WRITE(IWRI,91) IACS
      00     91     FORMAT(20H  AIR CONDITIONING  ,I3,3H PC,//)
      00            DO 95 IP=2,2
      00            IPP=IP
      00            IF(IP.EQ.1) IPP=4
      00            WRITE(IWRI,47) (POL(JP,IPP),JP=1,5)
      00            WRITE(IWRI,85)
      00            WRITE(IWRI,92)
      00     92     FORMAT(4X,7H(YEARS),/)
      00            DO 93 II=1,20
      00     93     WRITE(IWRI,94) II,ACFAC(1,II,   IP)
      00     94     FORMAT(6X,I3,14X,F6.3)
      00            WRITE(IWRI,229)
      00     95     CONTINUE
      00            GO TO 100
      00      C
      00      C
      00      C     PRINT AND CREATE FILE OF EMISSION FACTORS FOR CBD PATHWAY VMT
      00      C
      00      C
      00    101     WRITE(IWRI,102)
      00    102     FORMAT(////,86H  COMPOSITE CRUISE (GRAMS/SEC) AND EXCESS (GRAMS)
      00           1EMISSION FACTORS FOR CBD PATHWAY VMT,/)
      00            IF(ILOOP.EQ.7) GO TO 110
      00      C
      00      C     MODEL IS IN ANNUAL MODE
```

*** L06 ***

```
*** L07 ***
@ELT,L CEM.RUNTEST6
ELT 8A1 S7491C 04/23/82 15:45:24 (2)
     1.          02     @ASG,A TEST6.
     2.          00     @BRKPT PRINT$/TEST6
     3.          02     @ASG,A FILE8A.
     4.          00     @USE 8,FILE8A.
     5.          00     @XQT CEM.PREPRS
     6.          01     @ADD CEMDATA.TAPEFILE6
     7.          00     @FREE FILE8A.
     8.          00     @BRKPT PRINT$
     9.          00     @FREE TEST6.

END ELT.  ERRORS: NONE. TIME:  0.204 SEC. IMAGE COUNT: 9

@HDG,P  ******  SHORTY  ******
```

*** L07 ***

*** L08 ***

*** L08 ***

```
    64.          00
    65.          00
    66.          00
    67.          00
    68.          00
    69.          00
    70.          00
    71.          00
    72.          00
    73.          00
    74.          00
    75.          00
    76.          00
    77.          00
    78.          00
    79.          00
    80.          00          0.5
    81.          00
    82.          00
    83.          00
    84.          00
    85.          00
    86.          00
    87.          00
    88.          00
    89.          00
    90.          00
    91.          00
    92.          00
    93.          00
    94.          00
    95.          00
    96.          00
    97.          00
    98.          00
    99.          00
   100.          00
   101.          00
   102.          00
   103.          00
   104.          00
   105.          00
   106.          00
   107.          00
   108.          00
   109.          00
   110.          00
   111.          00
   112.          00
   113.          00
   114.          00
   115.          00
   116.          00
   117.          00
   118.          00
   119.          00
   120.          00
   121.          00
   122.          00
   123.          00
   124.          00
   125.          00
   126.          00
   127.          00
   128.          00
   129.          00
```

```
*** M01 ***
   131.        00            FCO = PCCO*.01                                                                  00059600
   132.        00            FHC = PCHS*.01                                                                  00059700
   133.        00            FCC = PCCC*.01                                                                  00059800
   134.        00      C                                                                                     00059900
   135.        00      C**FRACTION COLD OP(NON-CAT): FCO                                                     00060000
   136.        00      C**FRACTION HOT START(CAT):  FHC                                                      00060100
   137.        00      C**FRACTION COLD OP(CAT)   :  FCC                                                     00060200
   138.        00      C**FRACTION HOT START(NON-CAT): FHO                                                   00060300
   139.        00            FHO = (FCC-FCO) + FHC                                                           00060400
   140.        00      C                                                                                     00060500
   141.        00            DO 500 I = 1,20                                                                 00060600
   142.        00      C                                                                                     00060700
   143.        00               MY = CY - (20-I)                                                             00060800
   144.        00               MYC = MY - 50                                                                00060900
   145.        00               IAGE = CY - MY                                                               00061000
   146.        00               AGE = IAGE                                                                   00061100
   147.        00      C                                                                                     00061200
   148.        00      C************************                                                             00061300
   149.        00            IF(MYC.LE.0) STOP                                                               00061400
   150.        00      C>>>>>>>>>>>>>>>>>>>>>>>>                                                             00061500
   151.        00      C                                                                                     00061600
   152.        00            DO 500 IMODE = 1,4                                                              00061700
   153.        00      C                                                                                     00061800
   154.        00            IMOD4 = IMODE                                                                   00072600
   155.        00            IF(IMODE.EQ.4) IMOD4 = 6                                                        00072700
   156.        00            IAGEM = IAGE                                                                    00072800
   157.        00               MAX = MAXAGE(IMODE)                                                          00072900
   158.        00            IF(IAGEM.GT.MAX) IAGEM = MAX                                                    00073000
   159.        00            IF(IAGEM.EQ.0) VMTAGE=0.0                                                       00073100
   160.        00      C                                                                                     00073300
   161.        00            IF(IAGEM.GT.0) VMTAGE=CUMMIL(IAGEM,IMOD4)*.0001                                 00061900
   162.        00      C                                                                                     00062000
   163.        00               IGX = G(MYC,IREJN,IMODE)                                                     00062100
   164.        00      C                                                                                     00062200
   165.        00            DO 500 IP = 1,3                                                                 00062300
   166.        00      C                                                                                     00062400
   167.        00      C**DEFAULT                                                                            00062500
   168.        00      C                                                                                     00062600
   169.        00            IEQN = IEQNAR(MYC,IP,IREJN+(IMODE-1)*3)                                         00062700
   170.        00      C                                                                                     00062800
   171.        00      C****************************************                                             00064700
   172.        00      C                                                                                     00064800
   173.        00      C                                                                                     00064900
   174.        00            FACL = FCO                                                                      00065000
   175.        00            FACM = FHO                                                                      00065100
   176.        00            IF(IEQN.LT.2) GO TO 888                                                         00065200
   177.        00            FACL = FCC                                                                      00065300
   178.        00            FACM = FHC                                                                      00065400
   179.        00      888   FACR = (1.0 - FACL - FACM)                                                      00065500
   180.        00      C                                                                                     00065600
   181.        00      C*****************************************************************************       00065700
   182.        00      C                                                                                     00077200
   183.        00            DENOM = D1(IEQN,IP) + D2(IEQN,IP)*VMTAGE                                        00065800
   184.        00      C                                                                                     00077400
   185.        00            LEFT = FACL * (EXP(C(IEQN,1,IP)+T*C(IEQN,2,IP)) + C(IEQN,3,IP) +              00077500
   186.        00           *  C(IEQN,4,IP)*VMTAGE) * SPBACK(?,1,IP)/SPBOT(2,1,IF)                         00077600
   187.        00      C                                                                                     00077700
   188.        00      C                                                                                     00077800
   189.        00            MIDDLE=FACM*(C(IEQN,5,IP)+C(IEQN,6,IP)*VMTAGE)                                  00077900
   190.        00           *     *SPBACK(IGX,3,IP)/SPBOT(IGX,3,IP)                                          00078000
   191.        00      C                                                                                     00078100
   192.        00      C                                                                                     00078200
   193.        00            RIGHT=FACR*(C(IEQN,7,IP)+C(IEQN,8,IP)*VMTAGE)                                   00078300
   194.        00           *      *SPBACK(IGX,2,IP)/SPBOT(IGX,2,IP)                                         00078400
   195.        00      C                                                                                     00067000
   196.        00            TOP = LEFT + MIDDLE + RIGHT
```

*** M01 ***

```
@ELT,L CEM.CORFAC
ELT 8R1 S74C1C 04/23/82 15:44:48 (0)
```

*** M02 ***

```
      1.          00            SUBROUTINE CORFAC(INITFL,CY)
      2.          00      C
      3.          00      C
      4.          00      C     THIS SUBROUTINE COMPUTES THE TEMPERATURE/COLD START CORRECTION
      5.          00      C     FACTOR RATIOS NEEDED FOR MODAL EMISSIONS COMPUTATIONS
      6.          00      C     IT ALSO COMPUTES THE RATIO OF TOTAL EMISSIONS TO LDV EMISSIONS
      7.          00      C     FOR USE IN CORRECTING LDV MODAL EMISSIONS TO TOTAL EMISSIONS
      8.          00      C
      9.          00      C
     10.          00            COMMON/MODEM/EMAD1(2,4,6),EMCR1(2,4,6),EMIDLE(4)
     11.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,MS
     12.          00            COMMON/RET1/ALHRET(20,4,3)
     13.          00            COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
     14.          00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     15.          00           1IACS
     16.          00            COMMON/PRE5/ICOLDN,ICOLDC,IHOTC
     17.          00            COMMON/PRE6/ILOOP
     18.          00            COMMON/PRE7/TOTEM(2,12,3),RATIO(20,6,3),RATEM(2,6,3),
     19.          00           1WRMCOR(20,6,3),ACFAC(2,20,3)
     20.          00            DIMENSION SPD(3),CFRET(20,3,6),COMCCC(6),EFRETM(3,6),WTEDEF(3),
     21.          00           1CLDCOR(20,6,3),XLOAD(3)
     22.          00            REAL LNKDTA(7),MS(6),IDLRTM(3,6),IDLWTD(3)
     23.          00            INTEGER CY
     24.          00            EQUIVALENCE (SPD(1),LNKDTA(1))
     25.          00            IF(MODRUN.EQ.2) GO TO 5
     26.          00      C     ANNUAL MODE
     27.          00            ITEMP=ITEMPP
     28.          00            IAC=IACPM
     29.          00            IAMPM=2
     30.          00            GO TO 10
     31.          00      C     SHORT-TERM MODE
     32.          00       5    ITEMP=ITEMPS
     33.          00            IAC=IACS
     34.          00            IAMPM=1
     35.          00      C
     36.          00      C
     37.          00      C     COMPUTE CORRECTION FACTOR
     38.          00      C
     39.          00       10   INCC=ICOLDN
     40.          00            ICH=IHOTC
     41.          00            ICC=ICOLDC
     42.          00            RSPD=0.
     43.          00            DO 20 IS=1,6
     44.          00            RSPD=RSPD+5.
     45.          00            CALL INPUT(INITFL,CY,ICYPR,RSPD)
     46.          00            CALL EFCALX(CY,LNKDTA,MS,EFRETM,WTEDEF,COMCCC,IDLRTM,IDLWTD,CFRET)
     47.          00            DO 16 IP=2,2
     48.          00      C
     49.          00      C     ON FIRST CALL STORE IDLE EMISSION FACTOR
     50.          00      C
     51.          00            IF(IS.EQ.1) EMIDLE(IP)=IDLWTD(IP)
     52.          00      C
     53.          00      C
     54.          00      C     STORE PM OR SINGLE COMMUTE RATIOS OF COMPOSITE TO LDV EMISSION
     55.          00      C     FACTORS FOR EACH SPEED.LE.30 FOR PM OR SINGLE COMMUTE COLD START
     56.          00      C     PERCENTAGES
     57.          00      C
     58.          00            RATEM(IAMPM,IS,IP)=WTEDEF(IP)/EFRETM(IP,1)
     59.          00      C
     60.          00      C
     61.          00      C     STORE COLD START/TEMPERATURE/SPEED CORRECTION FACTORS BY MODEL
     62.          00      C     YEAR AND SPEED FOR PM OR SINGLE COMMUTE COLD START PERCENTAGES
     63.          00      C
     64.          00            DO 15 IMY=1,20
```

```
*** M03 ***
   131.          00      2000 CONTINUE                                    *** M03 ***
   132.          00      C
   133.          00      C
   134.          00      C
   135.          00              RETURN
   136.          00              END
END ELT.  ERRORS: NONE. TIME:  0.416 SEC. IMAGE COUNT: 136

@HDG,P  ******  FTP  ******
```

```
      1.          00            SUBROUTINE INPUT(INITFL,CY,ICYPR,RSPD)
      2.          00      C
      3.          00            COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
      4.          00            COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
      5.          00           1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
      6.          00            COMMON/FLGCOM/ALTFLG,ALHFLG,TRKFLG,IRDFLG,SP3FLG,NMHFLG,IDLFLG,   00008400
      7.          00           *              UNFFLG,MYMRFG,IMFLG,ICEVFG,PRTFLG,IFORM             00008500
      8.          00            COMMON/REGCOM/IREJN                                               00005500
      9.          00            COMMON/LNKCOM/SPD,TEMP,PCCO,PCHS,PCCC,VMTMIX                      00008700
     10.          00            COMMON/ALTCOM/INTALT(5,100),R4ALT(2,100),MODFLG(100),NEWFAC
     11.          00            COMMON/MYMCOM/MYM,MYR,TF
     12.          00            COMMON/JUNK1/AC,XLOAD,TRAILR,ABSHUM                               00005800
     13.          00            COMMON/JUNK2/HGWGT,HDWGT,HGCID,HDCID                              00005900
     14.          00            COMMON/PROJCM/PROJID                                              00006000
     15.          00            COMMON/IMCOM/ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2                    00006100
     16.          00            COMMON/SP1COM/SP1,SPAV                                            00009300
     17.          00      C                                                                       00009400
     18.          00            INTEGER ALHFLG,TRKFLG,ALTFLG,ALTKOD(4,20),CY,VMFLAG,SP3FLG,       00006300
     19.          00           *        NMHFLG,IDLFLG,UNFFLG,PRTFLG                               00009500
     20.          00            REAL XLOAD(3),SPD(3),VMTMIX(6),MYM(20,6),MYR(20,6),TF(20,6)       00009700
     21.          00            REAL LNKDTA(7),PROJID(20)                                         00009800
     22.          00            EQUIVALENCE (SPD(1),LNKDTA(1))                                    00009900
     23.          00      C     DATA VMTMIX/.803,.058,.058,.045,.031,.005/                        00006800
     24.          00            DATA IREAD,IWRI/5,6/                                              00010100
     25.          00      C                                                                       00007000
     26.          00      C*************************************************************************00007100
     27.          00      C     1)2 OR 1 LDT INPUT VMT FLAG                                       00007200
     28.          00      C     2)HAVE OPTION TO INPUT TEMP, ETC. ONE TIME OR EACH                00007300
     29.          00      C     6)FIX BEFGEN SO THAT CUM. MILEAGE INDEP OF NORMILIZATION          00007400
     30.          00      C       OF MYM.  ALSO, HAVE MC MYM BE SAME O.O.M. AS OTHER MODES        00007500
     31.          00      C                                                                       00007600
     32.          00      C*************************************************                      00007700
     33.          00      C**SKIP THIS STUFF EXCEPT DURING FIRST SUBR. CALL                       00007800
     34.          00            IF(INITFL.EQ.0) GO TO 500                                         00007900
     35.          00      C**READ IN PROJID,FLAGS, AND MYM-MYR                                    00008000
     36.          00      C                                                                       00008100
     37.          00      C     READ(IREAD,701) IPROMT                                            00008200
     38.          00            IPROMT=0                                                          00011400
     39.          00      C                                                                       00008300
     40.          00            IF(IPROMT.EQ.1) WRITE(IWRI,752)                                   00008400
     41.          00      752   FORMAT('0ENTER PROJECT ID:')                                      00011600
     42.          00      C     READ(IREAD,700) PROJID                                            00008600
     43.          00      700   FORMAT(20A4)                                                      00008700
     44.          00            IF(IPROMT.EQ.1) WRITE(IWRI,763)                                   00008800
     45.          00      C     READ(IREAD,701) INFLAG                                            00012000
     46.          00            INFLAG=1                                                          00012100
     47.          00            IF(IPROMT.EQ.1) WRITE(IWRI,757)                                   00012200
     48.          00      C     READ(IREAD,701) SP3FLG                                            00012300
     49.          00            SP3FLG=0                                                          00012400
     50.          00            IF(IPROMT.EQ.1) WRITE(IWRI,753)                                   00012400
     51.          00      C     READ(IREAD,701) VMFLAG                                            00012500
     52.          00            VMFLAG=IVTFLG                                                     00012600
     53.          00            IF(IPROMT.EQ.1) WRITE(IWRI,761)                                   00012600
     54.          00      C     READ(IREAD,701) MYMRFG                                            00012700
     55.          00            MYMRFG=MYFLAG                                                     00012800
     56.          00            IF(IPROMT.EQ.1) WRITE(IWRI,754)                                   00012800
     57.          00      C     READ(IREAD,701) ALTFLG                                            00012900
     58.          00            ALTFLG=0                                                          00013000
     59.          00            IF(IPROMT.EQ.1) WRITE(IWRI,762)                                   00013000
     60.          00      C     READ(IREAD,701) IMFLG                                             00013100
     61.          00            IMFLG=IMFLAG                                                      00013200
     62.          00            IF(IPROMT.EQ.1) WRITE(IWRI,755)                                   00013200
     63.          00      C     READ(IREAD,701) ALHFLG                                            00013300
     64.          00            ALHFLG=1
```

```
131.          00          *  0.23436623E+01,-0.11204816E-01, 0.10249770E+00, 0.42399745E-01,
132.          00          *  0.13865831E-02,-0.12622708E+00,-0.21434125E-01, 0.78567691E-05,
133.          00          * -0.25627413E-03, 0.14590406E+01, 0.98453689E-02, 0.14106291E-02/
134.          00           DATA ((BAD(I,J,8),I=1,12),J=1,4)/
135.          00          *  0.43861818E-01,-0.21134645E-02, 0.17915356E-02, 0.34610229E-03,
136.          00          *  0.46185669E-04,-0.66099726E-02,-0.83727646E-03,-0.14535626E-05,
137.          00          * -0.13788690E-04, 0.17964281E-01,-0.16962083E-03, 0.14447384E-04,
138.          00          *  0.10577946E+01,-0.67509890E-01, 0.62050894E-01, 0.11177700E-01,
139.          00          *  0.14054222E-02,-0.17354455E+00, 0.21822363E-01, 0.12219173E-03,
140.          00          * -0.29136962E-03, 0.30515997E+00,-0.65815225E-02, 0.36294828E-03,
141.          00          * -0.13883710E-01, 0.16726039E-02,-0.98873326E-03, 0.21440951E-03,
142.          00          * -0.10873865E-04, 0.37202311E-02,-0.34903688E-03,-0.18900773E-05,
143.          00          *  0.56169165E-05,-0.31288371E-02,-0.29762834E-03, 0.24409790E-04,
144.          00          *  0.72498024E+00,-0.24696082E-01, 0.47385048E-02, 0.25208097E-01,
145.          00          *  0.26412727E-03,-0.21000948E-01, 0.58031492E-02,-0.12748512E-03,
146.          00          * -0.55865545E-04, 0.99308199E+01, 0.20286597E-01, 0.10996473E-027
147.          00           DATA ((BAD(I,J,9),I=1,12),J=1,4)/
148.          00          *  0.32872163E-01,-0.17912151E-02, 0.16478680E-02, 0.17867390E-03,
149.          00          *  0.30185285E-04,-0.37381337E-02,-0.46735839E-03,-0.12688759E-06,
150.          00          * -0.71298127E-05, 0.14543414E-01, 0.14004891E-03, 0.93903158E-05,
151.          00          *  0.68093568E+00,-0.48967101E-01, 0.90703070E-01, 0.61544996E-02,
152.          00          *  0.97224675E-03,-0.92593908E-01, 0.13378501E-01, 0.19100340E-03,
153.          00          * -0.13010977E-03, 0.19975567E+00,-0.77630468E-02, 0.33748685E-03,
154.          00          *  0.34170204E-02, 0.19945543E-03,-0.30677355E-02, 0.61255763E-03,
155.          00          *  0.18396604E-04,-0.11950256E-02, 0.19879726E-03,-0.70431242E-05,
156.          00          * -0.43044383E-05, 0.37144264E-02,-0.47179312E-03, 0.27886097E-04,
157.          00          *  0.11632671E+01, 0.98060407E-02, 0.10129895E-01, 0.24097517E-01,
158.          00          *  0.44348370E-03,-0.40878017E-01, 0.59384778E-02,-0.56777251E-04,
159.          00          * -0.36860161E-04, 0.11757145E+01, 0.18084500E-01, 0.10434175E-027
160.          00           DATA ((BAD(I,J,10),I=1,12),J=1,4)/
161.          00          *  0.51108368E-01,-0.25070258E-02, 0.78906864E-03, 0.43855957E-03,
162.          00          *  0.49117531E-04,-0.68533719E-02, 0.80447760E-03,-0.30797005E-05,
163.          00          * -0.12977538E-04, 0.19100837E-01,-0.17357615E-03, 0.11204482E-04,
164.          00          *  0.10887880E+01,-0.71653783E-01, 0.56213965E-01, 0.12077432E-01,
165.          00          *  0.14173663E-02,-0.18283314E+00, 0.62780791E-01, 0.11450195E-03,
166.          00          * -0.30368124E-03, 0.31774898E+00,-0.97049810E-02, 0.31323357E-03,
167.          00          * -0.49334555E-03, 0.50314375E-01, 0.76942821E-03, 0.31159230E-04,
168.          00          *  0.10607382E-04, 0.11690883E-02,-0.83193772E-04, 0.40568434E-05,
169.          00          *  0.10587219E-05,-0.37931886E-02,-0.44279615E-03,-0.32576078E-04,
170.          00          *  0.12125368E+01, 0.65406486E-02, 0.50941523E-01,-0.25304142OE-01,
171.          00          *  0.74173696E-03,-0.53354159E-01, 0.93286969E-02,-0.95937824E-03,
172.          00          * -0.10803950E-03, 0.11116667E+01, 0.12330066E-01, 0.13453159E-027
173.          00           DATA ((BAD(I,J,11),I=1,12),J=1,4)/
174.          00          *  0.39079703E-01,-0.19706031E-02, 0.38747867E-02, 0.97423879E-04,
175.          00          *  0.41482446E-04,-0.33260076E-02, 0.43800077E-03, 0.56489025E-05,
176.          00          * -0.44552689E-05, 0.12728568E-01,-0.24365130E-04, 0.85449728E-05,
177.          00          *  0.16207556E+01,-0.89525878E-01, 0.95823228E-01, 0.61595142E-02,
178.          00          *  0.17752303E-02,-0.19405907E+00, 0.24501167E-01, 0.30660117E-03,
179.          00          * -0.31120144E-03, 0.30530828E+00,-0.67905560E-02, 0.22574072E-03,
180.          00          * -0.56096725E-04, 0.84308651E-03,-0.84325415E-03, 0.45987382E-03,
181.          00          *  0.75034513E-05,-0.16736379E-02,-0.50821458E-04,-0.73274914E-05,
182.          00          * -0.92814946E-01, 0.34423681E-02,-0.38629185E-03, 0.30544325E-04,
183.          00          *  0.15559692E+01,-0.88350438E-02, 0.12756127E+00, 0.30597743E-01,
184.          00          * -0.90960856E-03, 0.26481066E-01, 0.10340001E-01,-0.10261657E-03,
185.          00          * -0.11447867E-03, 0.13161192E+01, 0.25253572E-01, 0.10734126E-027
186.          00           DATA ((BAD(I,J,12),I=1,12),J=1,4)/
187.          00          *  0.54055668E-01,-0.26892500E-02,-0.10136301E-02, 0.19053000E-03,
188.          00          *  0.56229997E-04,-0.55606700E-02, 0.69297990E-03,-0.89999907E-06,
189.          00          * -0.11450000E-04, 0.12813311E-01,-0.21308000E-03, 0.12410000E-04,
190.          00          *  0.14931040E+01,-0.10349673E+00, 0.72227307E-02, 0.59160888E-02,
191.          00          *  0.20053601E-02,-0.23721021E+00, 0.26225589E-01, 0.23920002E-04,
192.          00          * -0.39849989E-03, 0.32876998E+00,-0.91728717E-02, 0.29819994E-03,
193.          00          *  0.14497600E-02, 0.43599005E-03, 0.17710000E-03, 0.23360000E-04,
194.          00          *  0.11920000E-04, 0.18444999E-03, 0.16439997E-04,-0.66000001E-06,
195.          00          * -0.11200000E-05, 0.23355400E-02,-0.40468993E-03, 0.33920005E-04,
196.          00          *  0.22299948E+01,-0.24412408E-01, 0.56603178E-01, 0.23462300E-02,
```

*** M05 ***

```
      C                                                                                                *** M06 ***
            WRITE(IWRI,23) ITEMPA,ITEMPP,IACAM,IACPM
            WRITE(IWRI,103)
  103       FORMAT(17H  MORNING COMMUTE)
            WRITE(IWRI,65) IICS,IICS,IICH
            WRITE(IWRI,104)
  104       FORMAT(17H  EVENING COMMUTE)
            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
      C     ***********************************************************************
      C     WHEN CHANGING PROGRAM TO BE ABLE TO HANDLE HYDROCARBONS, PROVISION
      C     MUST BE MADE TO PASS IN EVAPORATIVE AND CRANKCASE EMISSIONS AND
      C     TO ADD THEM TO EXHAUST HC EMISSIONS
      C     ***********************************************************************
            DO 109 IP=2,2
            IPP=IP
            IF(IP.EQ.1) IPP=4
            WRITE(IWRI,1001)  (POL(JP,IPP),JP=1,5)
 1001       FORMAT(35X,5A4)
            WRITE(IWRI,105)
  105       FORMAT(19X,22HCRUISE EMISSION FACTOR,6X,22HEXCESS EMISSION FACTOR)
            WRITE(IWRI,106)
  106       FORMAT(13H  SPEED (MPH),9X,2HAM,10X,2HPM,14X,2HAM,10X,2HPM,/)
            DO 107 II=1,6
            JSPD=II*5
  107       WRITE(IWRI,108) JSPD,(EMCR1(JJ,IP,II),JJ=1,2),(EMAD1(JJ,IP,II),
           1JJ=1,2)
  108       FORMAT(6X,I3,9X,1PE10.3,2X,E10.3,3X,2(2X,E10.3))
            WRITE(IFILE,8) ((EMCR1(I1,IP,I2),EMAD1(I1,IP,I2),I2=1,6),I1=1,2)
            WRITE(IWRI,229)
  109       CONTINUE
            GO TO 115
      C
      C     MODEL IS IN SHORT-TERM MODE
      C
  110       WRITE(IWRI,42) ITEMPS,IACS
            WRITE(IWRI,65) ICOLDN,ICOLDC,IHOTC
            DO 114 IP=2,2
            IPP=IP
            IF(IP.EQ.1) IPP=4
            WRITE(IWRI,1001) (POL(JP,IPP),JP=1,5)
            WRITE(IWRI,111)
  111       FORMAT(13H  SPEED (MPH),5X,22HCRUISE EMISSION FACTOR,5X,22HEXCESS
           1 EMISSION FACTOR,/)
            DO 112 II=1,6
            JSPD=II*5
  112       WRITE(IWRI,113) JSPD,EMCR1(1,IP,II),EMAD1(1,IP,II)
  113       FORMAT(6X,I3,14X,1PE10.3,16X,E10.3)
            WRITE(IFILE,28) (EMCR1(1,IP,I1),EMAD1(1,IP,I1),I1=1,6)
            WRITE(IWRI,229)
  114       CONTINUE
      C
      C
      C     PRINT AND CREATE A FILE OF THE IDLE EMISSION FACTOR FOR CBD
      C     PATHWAYS
      C
      C
  115       WRITE(IWRI,120)
  120       FORMAT(////,51H  IDLE EMISSION FACTOR (GRAMS/SEC) FOR CBD PATHWAY
           1S,///)
            WRITE(IWRI,121)
  121       FORMAT(11H  POLLUTANT,16X,15HEMISSION FACTOR,/)
            DO 122 IP=2,2
            IPP=IP
            IF(IP.EQ.1) IPP=4
            WRITE(IWRI,123) (POL(JP,IPP),JP=1,5),EMIDLE(IP)
  123       FORMAT(2X,5A4,7X,1PE10.3)
```

```
@ELT,L CEM.SHORTY
ELT 8R1 S7401C 04/23/82 15:45:25 (0)
```

*** M07 ***

```
      1.          00            SUBROUTINE SHORTY
      2.          00       C
      3.          00       C
      4.          00       C    THIS SUBROUTINE COMPUTES AND PRINTS THE MODEL OUTPUT STATISTICS
      5.          00       C    FOR THE SHORT-TERM MODE OF OPERATION
      6.          00       C
      7.          00       C
      8.          00            COMMON/IO/IREAD,IWRI,IFILE
      9.          00            COMMON/DEFINE/LPATH,LNPATH,NPATHS,NSEG(5),NGRID
     10.          00            COMMON/STRT/EXST(5,3,2)
     11.          00            COMMON/NOPATH/EXNPAM(5,5,3),EXNPPM(5,5,3)
     12.          00            COMMON/NOSTRT/EXNSAM(5,80,3),EXNSPM(5,80,3)
     13.          00            COMMON/LSTSEG/CNPLST(5,3)
     14.          00            COMMON/NOCOMM/NCOMM(5,5)
     15.          00            COMMON/TIMES/TT1(5,20,2),TT2(5,20,2),TOTTT(5,2)
     16.          00       C    THESE VARIABLES ARE PUT IN COMMON IN THIS SUBROUTINE SIMPLY TO
     17.          00       C    SAVE STORAGE SPACE--THEY NEED NOT BE IN COMMON IN THIS ROUTINE
     18.          00       C    WITH OTHER ROUTINES
     19.          00            COMMON/SAVE/EXP(5,3,2),COMSUM(10,3,2),CMNSUM(10,3,2),EINTVL(3),
     20.          00           1EXPSUM(3,2),AVCON(3,5,2)
     21.          00            DIMENSION GREXP(3),EXSUM(3)
     22.          00       C
     23.          00       C    PRINT HEADING
     24.          00            WRITE(IWRI,1)
     25.          00          1 FORMAT(1H1,40X,28HCOMMUTER EXPOSURE STATISTICS,//////)
     26.          00       C
     27.          00            DO 10 IP=2,2
     28.          00            GREXP(IP)=0.
     29.          00            DO 10 IPATH=1,NPATHS
     30.          00       C    NOTE NON-STREET CANYON EXPOSURE ARRAY IS NOT DIMENSIONED FOR ANY
     31.          00       C    POLLUTANT OTHER THAN CO
     32.          00       C    REPLACE STREET CANYON EXPOSURE WITH SUM OF STREET CANYON AND
     33.          00       C    NON-STREET CANYON PATHWAY EXPOSURES
     34.          00            EXST(IPATH,IP,1)=EXST(IPATH,IP,1)+EXNSAM(IPATH,1,1)
     35.          00       C    ADD STREET CANYON, NON-STREET CANYON, AND NON-PATHWAY EXPOSURES
     36.          00            EXP(IPATH,IP,1)=EXST(IPATH,IP,1)+EXNPAM(IPATH,1,IP)
     37.          00       C    FIND LARGEST EXPOSURE
     38.          00            IF(EXP(IPATH,IP,1).GT.GREXP(IP)) GREXP(IP)=EXP(IPATH,IP,1)
     39.          00         10 CONTINUE
     40.          00       C
     41.          00       C    BASED ON MAX EXPOSURE VALUE, DETERMINE VALUE LIMITS ON EXPOSURE
     42.          00       C    CLASSES
     43.          00            DO 35 IP=2,2
     44.          00            IF(GREXP(IP).LT.1.0) GO TO 30
     45.          00            IF(GREXP(IP).LT.10.0) GO TO 25
     46.          00            DUM=GREXP(IP)
     47.          00            DO 22 II=1,10
     48.          00            DUM=DUM/10.
     49.          00            IF(DUM.GT.10.) GO TO 22
     50.          00            IF(DUM.EQ.10.) GO TO 21
     51.          00            IDUM=DUM+1.
     52.          00            EINTVL(IP)=IDUM*10.**(II-1)
     53.          00            GO TO 35
     54.          00         21 EINTVL(IP)=10.
     55.          00            GO TO 35
     56.          00         22 CONTINUE
     57.          00         25 IF(GREXP(IP).EQ.1.0) GO TO 26
     58.          00            IF(GREXP(IP).EQ.10.0) GO TO 27
     59.          00            IDUM=GREXP(IP)+1.
     60.          00            EINTVL(IP)=IDUM/10.
     61.          00            GO TO 35
     62.          00         26 EINTVL(IP)=0.1
     63.          00            GO TO 35
     64.          00         27 EINTVL(IP)=1.0
```

```
130.    00
131.    00
132.    00
133.    00
134.    00
135.    00
136.    00
137.    00
138.    00
139.    00
140.    00
141.    00
142.    00
143.    00
144.    00
145.    00
146.    00
147.    00
148.    00
149.    00
150.    00
151.    00
152.    00
153.    00
154.    00
155.    00
156.    00
157.    00
158.    00
159.    00
160.    00
161.    00
162.    00          0.5
163.    00
164.    00
165.    00
166.    00
167.    00
168.    00
169.    00
170.    00
171.    00
172.    00
173.    00
174.    00
175.    00
176.    00
177.    00
178.    00          0.5
179.    00
180.    00
181.    00
182.    00
183.    00
184.    00
185.    00
186.    00
187.    00
188.    00
189.    00
190.    00
191.    00
192.    00
193.    00
194.    00
195.    00
```

*** M08 ***

```
      C                                                                      00067100
      C                                                                      00067200
            FACTOR = TOP/DENOM                                               00067300
      C                                                                      00067400
            IF(ALHFLG.EQ.1) FACTOR = FACTOR*ALHRET(I,IMODE,IP)               00067500
      C                                                                      00067600
            IMOD2 = IMODE                                                    00067700
      C                                                                      00067800
            IF(IMODE.EQ.4) IMOD2 = 6                                         00067900
      C                                                                      00068000
            CFRET(I,IP,IMOD2) = FACTOR                                       00068100
      C                                                                      00068200
      500   CONTINUE                                                         00068300
      C                                                                      00068400
      C*************************************************************************00068500
      C                                                                      00068600
      C                                                                      00068700
      C     FOR MODES 4 AND 5                                                00068800
      C                                                                      00068900
      C                                                                      00069000
            DATA ATR/ 2.42, 1.14, 1.56, 1.54,                                00069100
           *          1.74, 1.54, 1.24, 0.62,                               00069200
           *           .851, .812, .820, .764,                              00069300
           *          0.94, 0.94,  .820, 1.20,                              00069400
           *          1.44, 1.44,  1.20, 1.44,                              00069500
           *          0.62, 0.62,  0.72, 1.00  /                            00069600
      C                                                                      00069700
            DATA BTR/ -.153, -.065, -.096, -.071,                            00069800
           *          -.117, -.097, -.078, -.039,                           00069900
           *           .0074, .0094, .0081, .0120,                          00070000
           *          -.055, -.055,  -.051, -.076,                          00070100
           *          -.092, -.095,  -.072, -.088,                          00070200
           *          -.043, -.043,  -.054, -.074  /                        00070300
      C                                                                      00070400
            DATA CTR/ .0016, .0004, .0009, -.0003,                           00070500
           *          .0015, .0010, .0008, .0007,                           00070600
           *          .0000, .0000, .0000, .0000,                           00070700
           *          .0004, .0004,  .0005, .0006,                          00070800
           *          .0010, .0010,  .0006, .0008,                          00070900
           *          .0006, .0006,  .0009, .0012  /                        00071000
      C                                                                      00071100
            IF(TRKFLG.EQ.1) CALL TRKOPC(CY,HGWGT,HDWGT,HGCID,HDCID)          00071200
      C                                                                      00071300
      C     IF(SP3FLG.EQ.0) SPAV = SPD(1)/(1.3777386 - (PCCC*.30/79.42))     00082900
            IF(SP3FLG.EQ.0) SPAV = SP1                                       00083000
      C     IF(SP3FLG.EQ.1) SPAV = SPD(1)/(1.41114406 - (PCCO*.0041114406))  00083100
            IF(SP3FLG.EQ.1) SPAV = SPD(2)                                    00083200
      C     IF(SP3FLG.EQ.1) SPAV = AMIN1(SPD(1),SPD(2))                      00083300
      C***ELIMINATE TWO LINES ABOVE                                          00083400
      C                                                                      00083500
      C                                                                      00083600
            DO 700 IMODE = 4,5                                               00071700
            IM = IMODE-3                                                     00071800
               DO 700 IP = 1,3                                               00071900
      C                                                                      00072000
            IMY1 = CY-19                                                     00072100
                 DO 700 IMY = IMY1,CY                                        00072200
            IMYP = IMY - 50                                                  00072300
            IF(IMYP.LT.1) IMYP=1                                             00072400
      C                                                                      00072500
                  IX = 20-(CY-IMY)                                           00072600
      C                                                                      00072700
               INDX = HDINDX(IMYP,IREJN)                                     00072800
      C                                                                      00072900
            IF(IP.EQ.3.AND.IMODE.EQ.4) GO TO 720                             00073000
      C                                                                      00073100
```

*** N01 ***

```
*** NO2 ***
     65.          00       15   CLDCOR(IMY,IS,IP)=CFRET(IMY,IP,1)                                                    *** NO2 ***
     66.          00       16   CONTINUE
     67.          00       20   CONTINUE
     68.          00       C
     69.          00       C
     70.          00       C     COMPUTE RATIOS OF TEMPERATURE/COLD START/SPEED CORRECTION FACTORS
     71.          00       C     FOR EACH MODEL YEAR AND SPEED
     72.          00       C
     73.          00             DO 30 IP=2,2
     74.          00             DO 30 IS=1,6
     75.          00             DO 30 IMY=1,20
     76.          00        30   RATIO(IMY,IS,IP)=CLDCOR(IMY,IS,IP)/WRMCOR(IMY,IS,IP)
     77.          00       C
     78.          00       C
     79.          00       C     COMPUTE AM AND PM OR SINGLE COMMUTE AIR CONDITIONING CORRECTION
     80.          00       C     FACTORS
     81.          00       C
     82.          00       C
     83.          00             XLOAD(1)=0.
     84.          00             XLOAD(2)=0.
     85.          00             XLOAD(3)=0.
     86.          00             TRAILR=0.
     87.          00             ABSHUM=75.
     88.          00             IF(MODRUN.EQ.2) GO TO 35
     89.          00       C
     90.          00       C     ANNUAL MODE
     91.          00       C
     92.          00             AC=IACPM/100.
     93.          00             CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)
     94.          00             GO TO 36
     95.          00        32   AC=IACAM/100.
     96.          00             CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)
     97.          00             IAMPM=1
     98.          00             GO TO 36
     99.          00       C
    100.          00       C     SHORT-TERM MODE
    101.          00       C
    102.          00        35   AC=IACS/100.
    103.          00             CALL ALUH(CY,AC,XLOAD,TRAILR,PCCO,PCCC,ABSHUM)
    104.          00        36   DO 40 IP=2,2
    105.          00             DO 40 IMY=1,20
    106.          00             ACFAC(IAMPM,IMY,IP)=ALHRET(IMY,1,IP)
    107.          00        40   CONTINUE
    108.          00             IF(IAMPM.EQ.2) GO TO 32
    109.          00       C
    110.          00       C
    111.          00       C     PRINT OUTPUT OF SUBROUTINE CORFAC
    112.          00       C
    113.          00       C
    114.          00             IF(MODRUN.EQ.2) GO TO 41
    115.          00             ILOOP=5
    116.          00             GO TO 42
    117.          00        41   ILOOP=6
    118.          00        42   CALL OUTPUT(CY)
    119.          00             RETURN
    120.          00             END
END ELT.  ERRORS: NONE. TIME:  0.315 SEC. IMAGE COUNT: 120

@MDG,P  ******  DATA1  ******
```

```
@ELT,L CEM.FTP
ELT 881 S7491C 04/23/82 15:44:54 (0)
      1.          00          SUBROUTINE FTP(INITFL,CY)
      2.          00     C
      3.          00     C
      4.          00     C    THIS SUBROUTINE CALLS MOBLE1 SEVERAL TIMES TO CREATE TABLES OF FTP
      5.          00     C    EMISSION FACTORS FOR NON-CBD PATHWAYS AND NON-PATHWAY SOURCES
      6.          00     C
      7.          00     C
      8.          00          COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,JDUMY
      9.          00          COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
     10.          00         1IACS
     11.          00          COMMON/PRE4/IVTFLG,MYFLAG,IMFLAG,FMODYR(20),FVEHTY(6),IMYEAR,
     12.          00         1IMSTRG,IMMECH,IMBEG,IMEND,ILOC,IDATE(3)
     13.          00          COMMON/PRE6/ILOOP
     14.          00          INTEGER CY
     15.          00          IF(MODRUN.EQ.2) GO TO 50
     16.          00     C
     17.          00     C
     18.          00     C    MODEL IS IN ANNUAL MODE
     19.          00     C
     20.          00     C
     21.          00     C
     22.          00     C    ARE NON-CBD PATHWAY EMISSION FACTORS TO BE COMPUTED
     23.          00     C
     24.          00          IF(LPATH.EQ.2) GO TO 10
     25.          00     C
     26.          00     C    COMPUTE NON-CBD PATHWAY EMISSION FACTORS
     27.          00     C
     28.          00          ILOOP=1
     29.          00     C    100 PC WARM OPERATION
     30.          00          INCC=0
     31.          00          ICH=0
     32.          00          ICC=0
     33.          00     C    AM COMPUTATIONS
     34.          00          IAC=IACAM
     35.          00          ITEMP=ITEMPA
     36.          00          IAMPM=1
     37.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     38.          00     C    PM COMPUTATIONS
     39.          00          IAC=IACPM
     40.          00          ITEMP=ITEMPP
     41.          00          IAMPM=2
     42.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     43.          00          CALL OUTPUT(CY)
     44.          00     C
     45.          00     C
     46.          00     C    ARE NON-PATHWAY EMISSION FACTORS TO BE COMPUTED
     47.          00     C
     48.          00      10  IF(LNPATH.EQ.2) GO TO 100
     49.          00     C
     50.          00     C    COMPUTE NON-PATHWAY EMISSION FACTORS
     51.          00     C
     52.          00          ILOOP=2
     53.          00     C    AM COMPUTATIONS
     54.          00          IAC=IACAM
     55.          00          ITEMP=ITEMPA
     56.          00          IAMPM=1
     57.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     58.          00     C    PM COMPUTATIONS
     59.          00          IAC=IACPM
     60.          00          ITEMP=ITEMPP
     61.          00          IAMPM=2
     62.          00          CALL MOBLE1(IAMPM,INITFL,CY)
     63.          00          CALL OUTPUT(CY)
     64.          00          GO TO 100
```

*** N03 ***

```
      00              IF(IPROMT.EQ.1) WRITE(IWRI,756)                                   00013400
      00        C     READ(IREAD,701) TRKFLG                                            00013500
      00              TRKFLG=0
      00              IF(IPROMT.EQ.1) WRITE(IWRI,766)                                   00013600
      00        C     READ(IREAD,701) IFORM                                             00013700
      00              IFORM=1
      00              IF(IPROMT.EQ.1) WRITE(IWRI,765)                                   00013800
      00        C     READ(IREAD,701) PRTFLG                                            00013900
      00              PRTFLG=2
      00              IF(IPROMT.EQ.1) WRITE(IWRI,764)                                   00014000
      00        C     READ(IREAD,701) ICEVFG                                            00014100
      00              ICEVFG=0
      00              IF(IPROMT.EQ.1) WRITE(IWRI,759)                                   00014200
      00        C     READ(IREAD,701) IDLFLG                                            00014300
      00              IDLFLG=0
      00              IF(IPROMT.EQ.1) WRITE(IWRI,758)                                   00014400
      00        C     READ(IREAD,701) NMHFLG                                            00014500
      00              NMHFLG=0
      00              IF(IPROMT.EQ.1) WRITE(IWRI,760)                                   00014600
      00        C     READ(IREAD,701) UNFFLG                                            00014700
      00              UNFFLG=0
      00        C
      00        701   FORMAT(I1)                                                       00014800
      00        753   FORMAT(' ENTER VMFLAG:')                                        00014900
      00        754   FORMAT(' ENTER ALTFLG:')                                        00011400
      00        755   FORMAT(' ENTER ALHFLG:')                                        00011500
      00        756   FORMAT(' ENTER TRKFLG:')                                        00011600
      00        757   FORMAT(' ENTER SP3FLG:')                                        00011700
      00        758   FORMAT(' ENTER NMHFLG:')                                        00011800
      00        759   FORMAT(' ENTER IDLFLG:')                                        00011900
      00        760   FORMAT(' ENTER UNFFLG:')                                        00012000
      00        761   FORMAT(' ENTER MYMRFG:')                                        00012100
      00        762   FORMAT(' ENTER IMFLG:')                                         00012200
      00        763   FORMAT(' ENTER INFLAG:')                                        00012300
      00        764   FORMAT(' ENTER ICEVFG:')
      00        765   FORMAT(' ENTER PRTFLG:')
      00        766   FORMAT(' ENTER IFORM:')
      00              IF(MYMRFG.GT.0.AND.IPROMT.EQ.1)WRITE(IWRI,702)                    00016300
      00        702   FORMAT(1H ,'ENTER MYM OR MYR OR MYM AND MYR -FORMAT 6X20F4.1')
      00        C                                                                       00012500
      00              IF(MYMRFG.EQ.1.OR.MYMRFG.EQ.3) STOP
      00        C     IF(MYMPFG.EQ.2.OR.MYMRFG.EQ.3) READ(IREAD,710) MYR                00016700
      00              IF(MYMRFG.EQ.0) GO TO 7001
      00              DO 7000 MM=1,20
      00         7000 MYR(MM,1)=FMODYR(MM)
      00         7001 IF(VMFLAG.EQ.0) GO TO 7005
      00              DO 7002 MM=1,6
      00         7002 VMTMIX(MM)=FVEHTY(MM)
      00        710   FORMAT(20F4.1)                                                  00012700
      00        C                                                                     00012800
      00        C** HERE READ IN E.F. MODIFICATION DATA
      00         7005 IF(ALTFLG.NE.1) GO TO 810
      00              IF(IPROMT.EQ.1) WRITE(IWRI,790)
      00        790   FORMAT(1X,'CENTER NO. OF NEW E.F. INTERCEPT/SLOPE PAIRS(I2)')
      00              READ(IREAD,791)NEWFAC
      00        791   FORMAT(I2)
      00        C
      00              DO 800 IFAC=1,NEWFAC
      00              IF(IPROMT.EQ.1) WRITE(IWRI,792)
      00        792   FORMAT(1X,'ENTER REGION, VEH. TYPE,POLLUTANT,FIRST MY',
      00             1 /1X,'LAST MY,NEW INTERCEPT(A), AND NEW SLOPE(B)'/1X,
      00             2 'FORMAT I1,1X,I1,1X,I1,1X,I2,1X,I2,1X,F6.2,1X,F6.2')
      00              READ(IREAD,793) IRGALT,IMDALT,IPCALT,MYFRST,MYLAST,BASNEW,DELNEW
      00        793   FORMAT(I1,1X,I1,1X,I1,1X,I2,1X,I2,1X,F6.2,1X,F6.2)
      00        C
      00              INTALT(1,IFAC)=IRGALT
```

*** N04 ***

```
*** N05 ***
  197.          00          *  0.15921700E-02,-0.16246378E+00, 0.16982712E-01, 0.43299995E-04,
  198.          00          * -0.24700002E-03, 0.12069597E+01, 0.17500289E-01, 0.10409099E-02
  199.          00           DATA ((BAD(I,J,13) I=1,12) ,J=1,4)/
  200.          00          *  0.36732789E-01,-0.19923900E-02,-0.88590011E-03, 0.37806993E-03,
  201.          00          *  0.46429996E-04,-0.41235089E-02, 0.56539010E-03,-0.27699998E-05,
  202.          00          * -0.89200003E-05, 0.12623239E-01,-0.26730006E-03, 0.11490000E-04,
  203.          00          *  0.11040087E+01,-0.79453886E-01, 0.56303188E-01, 0.17077201E-02,
  204.          00          *  0.16181599E-02,-0.17064410E+00, 0.19803409E-01, 0.20100000E-03,
  205.          00          * -0.26381996E-03, 0.25955880E+00,-0.75969696E-02, 0.26727002E-03,
  206.          00          *  0.31042399E-02,-0.15060000E-04,-0.77950000E-03, 0.18693000E-03,
  207.          00          *  0.11030000E-04,-0.58944011E-02, 0.93650004E-04,-0.53000002E-06,
  208.          00          * -0.15899996E-05, 0.19946101E-03,-0.24173000E-03, 0.19810002E-04,
  209.          00          *  0.26041985E+01,-0.53603731E-01, 0.54826710E-01,-0.15170151E-01,
  210.          00          *  0.20758000E-02,-0.21999303E+00, 0.24707809E-01,-0.63069994E-01,
  211.          00          * -0.35096006E-03, 0.12111608E+01, 0.17200459E-01, 0.12504901E-02
  212.          00           DATA ((BAD(I,J,14) I=1,12) ,J=1,4)/
  213.          00          *  0.27533840E-01,-0.15563599E-02, 0.40788017E-02, 0.91499996E-05,
  214.          00          *  0.30790005E-04,-0.35172901E-02, 0.44818991E-03, 0.18999998E-06,
  215.          00          * -0.56500003E-05, 0.89845918E-02,-0.49080001E-04, 0.56800000E-05,
  216.          00          *  0.28853571E+00,-0.12315691E-01, 0.92407882E-01,-0.31504999E-02,
  217.          00          *  0.16614000E-03, 0.70702210E-02, 0.46436000E-03, 0.14813000E-03,
  218.          00          *  0.56589997E-04,-0.15976292E+00,-0.65233000E-02, 0.10359001E-03,
  219.          00          * -0.23524901E-02,-0.19142000E-03,-0.22534500E-03, 0.92391996E-03,
  220.          00          *  0.44479995E-04,-0.12658201E-02, 0.45565004E-03, 0.19199997E-05,
  221.          00          * -0.76200004E-05, 0.19500700E-02,-0.32205996E-03, 0.32359996E-04,
  222.          00          *  0.15483359E+01,-0.16585931E-01, 0.18629378E+00,-0.41712780E-01,
  223.          00          *  0.10766699E-01,-0.23111541E-01, 0.18924981E-01, 0.16261000E-03,
  224.          00          * -0.21463999E-03, 0.14692221E+01, 0.23637220E-01, 0.97246002E-03
  225.          00           DATA ((BAD(I,J,15) I=1,12) ,J=1,4)/
  226.          00          *  0.26675239E-01,-0.14723700E-02,-0.33800800E-02, 0.89969995E-06,
  227.          00          *  0.29100003E-04,-0.31962800E-02, 0.41041011E-03, 0.43800001E-02,
  228.          00          * -0.43800001E-05, 0.88412911E-02,-0.75780001E-04,-0.42700003E-05,
  229.          00          *  0.20974290E+00,-0.12848910E-01, 0.96859634E-01,-0.66359004E-02,
  230.          00          *  0.18598999E-03, 0.21924630E-01,-0.15685901E-02, 0.27883006E-03,
  231.          00          *  0.12293000E-03, 0.11387944E+00,-0.28685799E-02, 0.47189998E-04,
  232.          00          *  0.96731004E-03,-0.52360003E-04,-0.75957994E-03, 0.69431006E-03,
  233.          00          *  0.24389999E-04,-0.10261300E-02,-0.33395994E-03, 0.60000002E-06,
  234.          00          * -0.44899998E-05, 0.19466300E-02,-0.21615000E-03, 0.30509993E-04,
  235.          00          *  0.16613083E+01,-0.22728872E-01, 0.14670169E+00,-0.52854829E-01,
  236.          00          *  0.12229299E-02,-0.31757951E-01, 0.22992261E-01, 0.47430003E-04,
  237.          00          * -0.28821011E-03, 0.16162415E+01, 0.24095722E-01, 0.11892000E-02
  238.          00           DATA ((BAD(I,J,16) I=1,12) ,J=1,4)/
  239.          00          *  0.44346619E-01,-0.22166700E-02, 0.68992004E-03, 0.13456000E-03,
  240.          00          *  0.41330000E-04,-0.53420886E-02, 0.60573011E-03,-0.18299997E-05,
  241.          00          * -0.96399999E-05, 0.13101995E-01,-0.24442002E-03, 0.81700000E-05,
  242.          00          *  0.57655211E+00,-0.36277410E-01, 0.21571980E-01, 0.29442401E-02,
  243.          00          *  0.63650004E-03,-0.52853432E-01, 0.69414489E-02,-0.17560000E-04,
  244.          00          * -0.94470000E-04, 0.25350094E+00,-0.76948516E-02, 0.13530999E-03,
  245.          00          *  0.14861882E-01,-0.23429999E-03, 0.44333003E-03, 0.32001990E-03,
  246.          00          *  0.40309998E-04,-0.33075600E-02, 0.45430004E-03, 0.10399999E-05,
  247.          00          * -0.76300003E-05, 0.34054599E-02,-0.50338008E-03, 0.38159997E-04,
  248.          00          *  0.26140099E+01,-0.41381542E-01,-0.23107350E-01, 0.28863180E-01,
  249.          00          *  0.21597000E-02,-0.25081253E+00, 0.32850400E-01,-0.49969995E-02,
  250.          00          * -0.49582007E-03, 0.14941502E+01, 0.19196119E-01, 0.12189699E-02
  251.          00           DATA ((BAD(I,J,17) I=1,12) ,J=1,4)/
  252.          00          *  0.26262619E-01,-0.11058000E-02, 0.13030299E-02, 0.63369996E-06,
  253.          00          *  0.23860004E-04,-0.18674701E-02, 0.25699008E-03, 0.32999998E-06,
  254.          00          * -0.31099999E-05, 0.10452788E-01,-0.19408000E-03, 0.67499996E-05,
  255.          00          *  0.54005557E+00,-0.39594091E-01, 0.28211180E-01, 0.14426301E-02,
  256.          00          *  0.70013991E-03,-0.57096951E-01, 0.73297896E-02, 0.53550000E-04,
  257.          00          * -0.85880005E-04, 0.20601881E+00,-0.58017895E-02, 0.85580003E-04,
  258.          00          *  0.11879998E-01,-0.72619993E-03,-0.77164010E-03, 0.27149008E-03,
  259.          00          * -0.26509997E-04, 0.24923699E-02, 0.34106011E-03, 0.82000003E-06,
  260.          00          * -0.53900003E-05, 0.69821601E-02,-0.36151009E-03, 0.26890004E-04,
  261.          00          *  0.29064550E+01,-0.51300950E-01, 0.94466284E-02, 0.28370120E-01,
  262.          00          *  0.23778100E-02,-0.25426775E+00, 0.33705089E-01,-0.59040001E-04,
```

*** N05 ***

```
*** N06 ***
   395.          00      122  WRITE(IFILE,28) EMIDLE(IP)                    *** N06 ***
   396.          00      100  CONTINUE
   397.          00           RETURN
   398.          00           END
END ELT.  ERRORS: NONE. TIME:  0.672 SEC. IMAGE COUNT: 398

@HDG,P  ******  PREPRS  ******
```

```
      00          GO TO 35
      00    30    DUM=GREXP(IP)
      00          DO 34 II=1,10
      00          DUM=DUM*10.
      00          IF(DUM.LT.1.0) GO TO 34
      00          IDUM=DUM+1.
      00          EINTVL(IP)=IDUM/10.**(II+1)
      00          GO TO 35
      00    34    CONTINUE
      00    35    CONTINUE
      00C         INITIALIZE ARRAYS
      00          DO 46 IP=2,2
      00          DO 45 IC=1,10
      00          COMSUM(IC,IP,1)=0.
      00    45    CMNSUM(IC,IP,1)=0.
      00          EXPSUM(IP,1)=0.
      00    46    EXSQSM(IP)=0.
      00C
      00C         COMPUTE HISTOGRAM DATA AND AVERAGE AND STANDARD DEVIATION OF
      00C         PATHWAY EXPOSURE
      00          DO 60 IP=2,2
      00C
      00C         PRINT PATHWAY EXPOSURE LIST HEADING
      00          WRITE(IWRI,40)
      00    40    FORMAT(14X,13HEXPOSURE FROM,9X,13HEXPOSURE FROM, 66X,
      00         116HLAST AREA SOURCE,/,14X,15HPATHWAY SOURCES,4X,
      00         219HNON-PATHWAY SOURCES,5X,14HTOTAL EXPOSURE,5X,12HTOTAL TRAVEL,
      00         35X,17HAV. CONCENTRATION,6X,13HCONCENTRATION,/,2X,7HPATHWAY,4X,
      00         416H(GRAM SEC/CU. M),5X,16H(GRAM SEC/CU. M),6X,
      00         516H(GRAM SEC/CU. M),5X,10HTIME (SEC),8X,13H(GRAMS/CU. M),8X,
      00         613H(GRAMS/CU. M),/)
      00          DO 60 IPATH=1,NPATHS
      00          DO 50 IC=1,10
      00          IF(EXP(IPATH,IP,1).LE.IC*EINTVL(IP)) GO TO 51
      00    50    CONTINUE
      00    51    COMSUM(IC,IP,1)=COMSUM(IC,IP,1)+NCOMM(IPATH,1)
      00          CMNSUM(IC,IP,1)=CMNSUM(IC,IP,1)+NCOMM(IPATH,1)*TOTTT(IPATH,1)
      00          EXPSUM(IP,1)=EXPSUM(IP,1)+EXP(IPATH,IP,1)
      00          EXSQSM(IP)=EXSQSM(IP)+EXP(IPATH,IP,1)**2
      00          AVCONC(IP,IPATH,1)=EXP(IPATH,IP,1)/TOTTT(IPATH,1)
      00C         PRINT PATHWAY EXPOSURE AND SO FORTH
      00          WRITE(IWRI,55) IPATH,EXST(IPATH,IP,1),EXNPAM(IPATH,1,IP),EXP(
      00         1IPATH,IP,1),TOTTT(IPATH,1),AVCONC(IP,IPATH,1),CNPLST(IPATH,IP)
      00    55    FORMAT(5(I2,9X,E10.3,11X,E10.3,12X,E10.3,8X,F10.2,9X,E10.3,
      00         1,2X,E10.3))
      00    60    CONTINUE
      00C         COMPUTE AVERAGE AND STANDARD DEVIATION OF EXPOSURES ON ALL PATH-
      00C         WAYS AND PRINT
      00          DO 62 IP=2,2
      00          STDEV=SQRT((1./NPATHS)*(EXSQSM(IP)-(EXPSUM(IP,1)**2)/NPATHS))
      00          EXPSUM(IP,1)=EXPSUM(IP,1)/NPATHS
      00    62    WRITE(IWRI,63) EXPSUM(IP,1),STDEV
      00    63    FORMAT(//////,2X,50HAVERAGE EXPOSURE FOR ALL PATHWAYS (GRAM SEC/CU
      00         1. M),E10.3,/,2X,55HSTANDARD DEVIATION OF PATHWAY EXPOSURE (GRAM SE
      00         2C/CU. M) E10.3,//////)
      00C         COMPUTE REST OF HISTOGRAM DATA
      00          DO 67 IP=2,2
      00          TOTCOM=0.
      00          TOTCMN=0.
      00          DO 65 IC=1,10
      00          TOTCOM=TOTCOM+COMSUM(IC,IP,1)
      00    65    TOTCMN=TOTCMN+CMNSUM(IC,IP,1)
      00          DO 66 IC=1,10
      00          COMSUM(IC,IP,1)=(COMSUM(IC,IP,1)/TOTCOM)*100.
      00    66    CMNSUM(IC,IP,1)=CMNSUM(IC,IP,1)/TOTCMN
      00    67    CONTINUE
```

```
*** N08 ***                                                                    *** N08 ***
   196.          00
   197.          00
   198.          00
   199.          00
   200.          00
   201.          00
   202.          00
   203.          00
   204.          00
   205.          00
   206.          00
   207.          00
   208.          00
   209.          00      9M                                          1

END ELT.  ERRORS: NONE. TIME:  0.744 SEC. IMAGE COUNT: 209

@HDG,P  ******  TAPEFILE6  ******
```

```
*** 001 ***
   263.          00              CFRET(IX,IP,IMODE) = EXP(ATR(INDX,IP,IM) +                                    00073200
   264.          00             *  BTR(INDX,IP,IM)*SPAV + CTR(INDX,IP,IM)*SPAV*SPAV)                          00073300
   265.          00      C                                                                                     00073400
   266.          00              GO TO 688                                                                     00073500
   267.          00      720     CONTINUE                                                                      00073600
   268.          00      C                                                                                     00073700
   269.          00              CFRET(IX,IP,IMODE) = ATR(INDX,IP,IM) + BTR(INDX,IP,IM)*SPAV                   00073800
   270.          00      C                                                                                     00073900
   271.          00      688     CONTINUE                                                                      00074000
   272.          00      C                                                                                     00074100
   273.          00              IF(TRKFLG.EQ.1) CFRET(IX,IP,IMODE) = CFRET(IX,IP,IMODE)*                      00074200
   274.          00             *                                     TRKRET(IX,IP,IM)                       00074300
   275.          00      C                                                                                     00074400
   276.          00      700     CONTINUE                                                                      00074500
   277.          00              RETURN                                                                        00074600
   278.          00      C                                                                                     00074700
   279.          00      C       DEBUG SUBCHK                                                                  00074800
   280.          00              END                                                                           00074900

END ELT.  ERRORS: NONE. TIME:  0.813 SEC. IMAGE COUNT: 280

$HDG,P  ******  BLKDAT  ******
```

```
@ELT,L CEM.DATA1
ELT $R1 S74Q1C 04/23/82 15:44:48 (0)
     1.          00      1P TEST 1A              750101 1 1 1 1 0 0 2
     2.          00      2P                                                  76003004008008010
     3.          00      3P 21 21 27 75 75  0  0 2,5-2.5
     4.          00      4P 21 21 21 21 15 21 21 21 21 15 27 27 27 27 10
     5.          00      5P 21 21 21 21 15 21 21 21 21 15 27 27 27 27 10

END ELT.  ERRORS: NONE. TIME:  0.205 SEC. IMAGE COUNT: 5

@HDG,P  ******  DATA2  ******
```

*** 002 ***

```
*** 003 ***
     65.          00     C                                                                                    *** 003 ***
     66.          00     C
     67.          00     C      MODEL IS IN SHORT-TERM MODE
     68.          00     C
     69.          00     C
     70.          00     C
     71.          00     C      ARE NON-CBD PATHWAY EMISSION FACTORS TO BE COMPUTED
     72.          00     C
     73.          00      50    IAMPM=1
     74.          00            IAC=IACS
     75.          00            ITEMP=ITEMPS
     76.          00            IF(LPATH.EQ.2) GO TO 60
     77.          00     C
     78.          00     C      COMPUTE NON-CBD PATHWAY EMISSION FACTORS
     79.          00     C
     80.          00            ILOOP=3
     81.          00     C      100 PC WARM OPERATION
     82.          00            INCC=0
     83.          00            ICH=0
     84.          00            ICC=0
     85.          00            CALL MOBLE1(IAMPM,INITFL,CY)
     86.          00            CALL OUTPUT(CY)
     87.          00     C
     88.          00     C
     89.          00     C      ARE NON-PATHWAY EMISSION FACTORS TO BE COMPUTED
     90.          00     C
     91.          00      60    IF(LNPATH.EQ.2) GO TO 100
     92.          00     C
     93.          00     C      COMPUTE NON-PATHWAY EMISSION FACTORS
     94.          00     C
     95.          00            ILOOP=4
     96.          00            CALL MOBLE1(IAMPM,INITFL,CY)
     97.          00            CALL OUTPUT(CY)
     98.          00      100   CONTINUE
     99.          00            RETURN
    100.          00            END
END ELT.  ERRORS: NONE. TIME:  0.304 SEC. IMAGE COUNT: 100

@HDG,P  ******  GETCUM  ******
```

```
      00          INTALT(2,IFAC)=IMDALT                                                    *** 004 ***
      00          INTALT(3,IFAC)=IPLALT
      00          INTALT(4,IFAC)=MYFRST
      00          INTALT(5,IFAC)=MYLAST
      00          R4ALT(1,IFAC)=BASNEW
      00          R4ALT(2,IFAC)=DELNEW
      00    C
      00    800   CONTINUE
      00    810   CONTINUE
      00    C                                                                          00012800
      00    C**HERE READ IN INSP./MAINT. PARAMS                                        00012900
      00          IF(IMFLG.EQ.0) GO TO 900                                           00013000
      00          IF(IPROMT.EQ.1) WRITE(IWRI,772)                                    00017200
      00    772   FORMAT('OENTER YEAR I/M BEGINS, STRINGENCY, M.I. FLAG,'
      00         *  'FIRST MODEL YEAR AND LAST MODEL YEAR OF PROG BENEFITS'/
      00         *  'FORMAT I2,1X,I2,1X,I1,2(1X,I2)' )
      00          IF(INFLAG.EQ.0)
      00    C     *READ(IREAD,729) ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2                 00013300
      00    C     IF(INFLAG.EQ.1)                                                    00017800
      00         *READ(IREAD,729) ICYIM,ISTRIN,IMTFLG,MODYR1,MODYR2                  00017700
      00          IF(INFLAG.NE.1) GO TO 900                                          00017800
      00          ICYIM=IMYEAR
      00          ISTRIN=IMSTRG
      00          IMTFLG=IMMECH
      00          MODYR1=IMBEG
      00          MODYR2=IMEND
      00    900   CONTINUE                                                           00013500
      00    C                                                                        00013600
      00    729    FORMAT(I2,1X,I2,1X,I1,2(1X,I2))
      00    C                                                                        00013800
      00          CALL TFCALX                                                      00013900
      00    C                                                                        00014000
      00          RETURN                                                           00014100
      00    C                                                                        00014200
      00    C*************************************************************************00014300
      00    C                                                                        00014400
      00    C**READ E.F. CALCULATION INPUT PARAMETERS                                00014500
      00    C                                                                        00014600
      00    500   CONTINUE                                                           00014700
      00    C                                                                        00014800
      00          IRDFLG = 1                                                       00014900
      00    C                                                                        00015000
      00          IF(IPROMT.EQ.1.AND.SP3FLG.EQ.0) WRITE(IWRI,767)                  00015100
      00    767   FORMAT('OENTER REGION, CY,SP0(1),TEMP,PCCO,PCHS,PCCC: '/
      00         *  'FORMAT I1,1X,I2,1X,F4.1,1X,F2.0,3(1X,F5.2)'/)                   00015200
      00          IF(IPROMT.EQ.1.AND.SP3FLG.EQ.1) WRITE(IWRI,768)                  00019700
      00    768   FORMAT('OENTER REGION, CY,SP0(3),TEMP,PCCO,PCHS,PCCC: '/         00015400
      00         * 'FORMAT I1,1X,I2,  3(1X,F4.1),1X,F2.0,3(1X,F5.2)')
      00    724   FORMAT(I1,1X,I2,  3(1X,F4.1),1X,F2.0,3(1X,F5.2))
      00    C                                                                        00015500
      00          IF(SP3FLG.EQ.0.AND.INFLAG.EQ.0)                                  00015600
      00         1READ(IREAD,725)IREJN,CY,SP1,TEMP,PCCO,PCHS,PCCC
      00    C     IF(EOF(IREAD),EQ.1.0) GO TO 99
      00          IF(SP3FLG.EQ.1.AND.INFLAG.EQ.0)                                  00015800
      00         1READ(IREAD,724) IREJN,CY,SP0,TEMP,PCCO,PCHS,PCCC
      00    C     IF(EOF(IREAD),EQ.1.0) GO TO 99
      00          IF(SP3FLG.EQ.1.AND.INFLAG.EQ.1)                                  00020600
      00         1READ(IREAD,724) IREJN,CY,SP0,TEMP,PCCO,PCHS,PCCC
      00    C     IF(EOF(IREAD),EQ.1.0) GO TO 99
      00    C     IF(SP3FLG.EQ.0.AND.INFLAG.EQ.1)                                  00020400
      00    C    1READ(IREAD,725)IREJN,CY,SP1,TEMP,PCCO,PCHS,PCCC
                 IF(SP3FLG.NE.0.OR.INFLAG.NE.1) GO TO 3725
                 SP1=SP0
                 TEMP=TEMP
                 PCCO=PCCO
```

```
*** 005 ***
   263.          00          * -0.51394990E-03, 0.16673622E+01, 0.15416130E-01, 0.13155600E-02/
   264.          00           DATA ((BAD(I,J),I=1,12),J=1,4)/
   265.          00          *  0.80684014E-02,-0.40020002E-03, 0.90040010E-03, 0.65000000E-04,
   266.          00          *  0.66000002E-05,-0.73569990E-03, 0.89800000E-04,-0.30000001E-06,
   267.          00          * -0.60000002E-06, 0.53815991E-02,-0.14550000E-03,-0.19999998E-05,
   268.          00          *  0.21578521E+00,-0.12577798E-01, 0.51477298E-02,-0.23425999E-02,
   269.          00          *  0.16780000E-03,-0.15755999E-02, 0.28229994E-03, 0.12529999E-03,
   270.          00          *  0.48500006E-04, 0.11455778E+00,-0.46298988E-02, 0.19869994E-04,
   271.          00          *  0.10816000E-01,-0.12250000E-02,-0.73540001E-03, 0.53939992E-03,
   272.          00          *  0.44400003E-04,-0.32972000E-02, 0.52660005E-03, 0.31199997E-05,
   273.          00          * -0.84000003E-05, 0.26507999E-02,-0.35370002E-03, 0.23400004E-04,
   274.          00          *  0.22840490E+01,-0.26279900E-01, 0.65590084E-01, 0.53922199E-01,
   275.          00          *  0.21289000E-02,-0.16557199E+00, 0.30232102E-01,-0.90100002E-04,
   276.          00          * -0.41270000E-03, 0.14689569E+01, 0.70669018E-02, 0.16137001E-02/
   277.          00           DO 2 I=1,20
   278.          00        2  FMOV(I)=FF(21-I,1)
   279.          00           DO 5 I1=1,2
   280.          00           DO 5 I2=1,4
   281.          00           DO 5 I3=1,6
   282.          00           EMAD1(I1,I2,I3)=0.0
   283.          00        5  EMCR1(I1,I2,I3)=0.0
   284.          00           DO 7000 IBLIP=MODRUN,2
   285.          00           ITIME=IBLIP
   286.          00           IF(MODRUN.EQ.2) ITIME=1
   287.          00           MAXCY=CY
   288.          00           IF(MAXCY.LT.70) GO TO 1100
   289.          00           DO 1000 I5=1,6
   290.          00           A=ACCEL
   291.          00           DO 1010 NPASS=1,2
   292.          00           V=I5*5.0
   293.          00           DO 20 I1=1,20
   294.          00           DO 10 I2=1,4
   295.          00           EMAD(I1,I2)=0.0
   296.          00       10  EMCRD(I1,I2)=0.0
   297.          00       20  CONTINUE
   298.          00           AMAX=1.0
   299.          00           AMIN=-1.2
   300.          00           A1=-1.0/AMAX
   301.          00           A2=-1.0/AMIN
   302.          00           IF(A.EQ.0.) GO TO 200
   303.          00           T=ABS(V/A)
   304.          00           ABSA=ABS(A)
   305.          00           AA=A*A
   306.          00           TT=T*T
   307.          00           X(1)=T
   308.          00           X(2)=ABSA*TT/2.
   309.          00           X(3)=A*T
   310.          00           X(4)=ABSA*A*TT/2.
   311.          00           X(5)=AA*TT*T/3.
   312.          00           X(6)=AA*T
   313.          00           X(7)=ABSA*AA*TT/2.
   314.          00           X(8)=AA*A*TT*T/3.
   315.          00           X(9)=AA*A*TT*T/3.
   316.          00           X(10)=X(1)
   317.          00           X(11)=X(2)
   318.          00           X(12)=X(5)
   319.          00           IF(A.GE.AMAX) HOA=0.
   320.          00           IF(A.LE.AMIN) HOA=0.
   321.          00           IF(A.GE.0.0.AND.A.LT.AMAX) HOA=(A1*A)+1.0
   322.          00           IF(A.LE.0.0.AND.A.GT.AMIN) HOA=(A2*A)+1.0
   323.          00           SOA=1.0-HOA
   324.          00       C   CALCULATE THE NORMAL EMISSIONS OF INCLUDED GROUPS, DETERIORATED TO
   325.          00       C    JULY 1975.
   326.          00           DO 100 I1=1,19
   327.          00           DO 90 I2=2,4
   328.          00           DO 80 I3=2,5
   329.          00
```

```
*** 006 ***                                                                                                    *** 006 ***
@ELT,L CEM.PREPRS
ELT 8R1 S7491C 04/23/82 15:45:18 (0)
     1.          00      C      PROGRAM PREPRS (INPUT,OUTPUT,TAPE5=INPUT,TAPE6=OUTPUT,TAPE8)
     2.          00      C
     3.          00      C
     4.          00      C                THIS PROGRAM IS AN EMISSIONS PREPROCESSOR FOR
     5.          00      C                PROGRAM COMMEX
     6.          00      C
     7.          00      C
     8.          00      C      IT INTERFACES WITH THE EPA MOBILE SOURCE EMISSION FACTOR PROGRAM
     9.          00      C      MOBILE1 (WITH SOME MINOR CHANGES TO MOBILE1) TO PRODUCE TABLES
    10.          00      C      OF EMISSION FACTORS TO BE USED BY PROGRAM COMMEX IN COMPUTING NON-
    11.          00      C      CBD PATHWAY CO EMISSION RATES AND CO EMISSION RATES ARISING FROM
    12.          00      C      NON-PATHWAY SOURCES.
    13.          00      C      IT ALSO COMPUTES TABLES OF EMISSION FACTORS, USING AN ADAPTATION
    14.          00      C      OF THE EPA MODAL MODEL, TO BE USED BY PROGRAM COMMEX IN COMPUTING
    15.          00      C      CBD PATHWAY CO EMISSION RATES.  FACTORS TO CORRECT MODAL EMISSIONS
    16.          00      C      FOR TEMPERATURE/COLD STARTS, CALENDAR YEAR, AND VEHICLE TYPE
    17.          00      C      DISTRIBUTIONS ARE ALSO GENERATED (USING PARTS OF MOBILE1) AND
    18.          00      C      STORED IN TABLES
    19.          00      C
    20.          00      C
    21.          00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
    22.          00           1IACS
    23.          00            INTEGER CY
    24.          00            DATA INITFL/1/                                                          00001700
    25.          00      C
    26.          00      C
    27.          00      C     READ AND EDIT BASIC VARIABLES
    28.          00      C
    29.          00            CALL INPT(ACCEL,DECEL,CY)
    30.          00      C
    31.          00      C
    32.          00      C     COMPUTE, PRINT, AND CREATE A FILE OF NON-CBD PATHWAY AND NON-
    33.          00      C     PATHWAY SOURCE EMISSION FACTORS
    34.          00      C
    35.          00            CALL FTP(INITFL,CY)
    36.          00      C
    37.          00      C
    38.          00      C     COMPUTE AND PRINT
    39.          00      C                          TEMPERATURE/COLD START CORRECTION FACTORS
    40.          00      C                          LDV TO COMPOSITE EMISSIONS CORRECTION FACTORS
    41.          00      C                          AIR CONDITIONING CORRECTION FACTORS
    42.          00      C     FOR CBD PATHWAY EMISSIONS (MODAL)
    43.          00      C
    44.          00            IF(LPATH.EQ.2) GO TO 10
    45.          00            CALL CORFAC(INITFL,CY)
    46.          00      C
    47.          00      C
    48.          00      C     COMPUTE, PRINT, AND CREATE A FILE OF CBD PATHWAY EMISSION FACTORS
    49.          00      C     (MODAL)
    50.          00      C
    51.          00            CALL MODMOD (ACCEL,DECEL,CY)
    52.          00       10   CONTINUE
    53.          00            END
    54.          00            SUBROUTINE INPT(ACCEL,DECEL,CY)
    55.          00      C
    56.          00      C
    57.          00      C     THIS SUBROUTINE READS AND EDITS THE INPUT DATA NEEDED BY THE
    58.          00      C     EMISSIONS PREPROCESSOR
    59.          00      C
    60.          00      C
    61.          00            COMMON/PRE1/MHEAD(10),IAC,ITEMP,INCC,ICH,ICC,IUMY
    62.          00            COMMON/PRE2/MODRUN,LPATH,LNPATH,ITEMPA,ITEMPP,IACAM,IACPM,ITEMPS,
    63.          00           1IACS
    64.          00            COMMON/PRE3/CL7A0(5),CL3CA(5),HET3A(5),CL3MP(5),CL3CP(5),
```

```
*** 007 ***                                                                                                    *** 007 ***
   131.          00              DO 71 IP=2,2
   132.          00        C     PRINT HISTOGRAM DATA HEADINGS AND DATA
   133.          00              WRITE(IWRI,70)
   134.          00           70 FORMAT(17X,12HVALUE LIMITS,9X,17HPERCENT COMMUTERS,5X,27HPROBABILI
   135.          00             1TY OF EXPERIENCING,/,2X,5HCLASS,8X,16H(GRAM SEC/CU. M),12X,8HIN CL
   136.          00             2ASS,15X,14HEXPOSURE CLASS,/)
   137.          00              DO 71 IC=1,10
   138.          00              V1=(IC-1)*EINTVL(IP)
   139.          00              V2=V1+EINTVL(IP)
   140.          00           71 WRITE(IWRI,72) IC,V1,V2,COMSUM(IC,IP,1),CMNSUM(IC,IP,1)
   141.          00           72 FORMAT(3X,I2,6X,E10.3,2H -,E10.3,11X,F4.0,23X,F5.3)
   142.          00              RETURN
   143.          00              END

END ELT.  ERRORS: NONE. TIME:  0.379 SEC. IMAGE COUNT: 143

@HDG,P  ******  SPFCLX  ******
```

```
*** 008 ***
@ELT,L CEM.TAPEFILE6
ELT $R1 S7491C 04/23/82 15:45:31 (0)
 SI IS NOT SIR TYPE SDF *[F@@[@@@@@@
     1.          00       1P TEST 6                  800101 1 2 1 1 0 0 0
     2.          00        3P 21 21 27 75  0 2.5-2.5
     3.          00      4P  10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10

END ELT.  ERRORS: NONE. TIME:  0.201 SEC. IMAGE COUNT: 3

@HDG,P  ******  TAPEFILE7  ******
```